

# Student Competency Handbook



2021/2022  
Veterans Affairs Health Care System

If found please return to VA Nuclear Medicine or:



## Competencies

Students that can perform the totality of features and characteristics of a study without assistance or error shall be deemed competent by a signature of concurrence from a supervising technologist. Each study must be performed by the student in its entirety for consideration. Students electing to “comp” a study must state their intention in advance. The student may repeat a comp if their original attempt is deemed unsatisfactory.

### How do the technologists proctor a competency?

A signature from a supervising technologist confirms that the student has adequate knowledge and skill to perform a study independently. The technologist proctoring a competency may interview the student to ensure sufficient understanding of the procedure and probable outcomes. The student technologist is expected to have knowledge of the following criteria before attempting to “comp”:

- The indications for the study
- Patient prep and contraindications
- The radiopharmaceutical (including energy of the nuclide and half-life)
- The normal (expected) biodistribution including target organ, critical organ & route of excretion
- The route of administration
- The dose or dose range
- Computer acquisition and processing parameters
- Basic knowledge of alternative/abnormal uptake patterns

Computer processing, clerical work, linen changes and post-scan patient support shall all be considered essential components of a competency.

### How many competencies must be completed?

Each grading period, students must collect signatures on at least 5 competencies (requirement waived for the CT rotations). There is no assigned order of completion. Students who fail to complete sufficient competencies at the end of each grading period may be placed on clinical probation or dismissed (2<sup>nd</sup> infraction). Failure to gain signatures on a total of 40 competencies (including all mandatory comps) by the end of the program may delay or prevent graduation from the Program. Competencies marked with an asterisk (\*) are optional.

### Competencies not requiring a signature of concurrence

Ten therapy observations, two physician read-outs, two radiopharmacy internships and ten blood draws must be completed prior to graduation. These competencies do not require a full signature of concurrence although initials may be requested for verification purposes. Furthermore, non-signature comps may not be counted amongst the 5 required competencies per grading period.

## Student Supervision

Students shall be supervised at all times by licensed health care providers certified in Nuclear Medicine Technology (or higher-level practitioner). There shall always be at least 1 supervisor per student. Students shall inform supervising technologists before injecting or scanning patients. While trainees are expected to develop independence during the course of training, they are never to operate without supervision or be used as interim employees. Student-to-camera ratio shall never exceed 1-to-1.

## When are students expected to attend clinic?

Students are expected to work a full 8-hour shift on Mondays, Wednesdays and Fridays and a partial shift on Tuesday and Thursday mornings. Time shall be allotted on Tuesday and Thursday afternoon for commuting to classes. When there's a lull in the clinic, students may alternately study (or work on independent projects as assigned) but only with permission from supervisors. Students are not allowed to leave clinic without prior authorization from the Clinical Supervisor and Program Director. The shift shall be determined by the clinical supervisor but should include a varied clinical experience conducive to the completion of studies identified herein. Persistent absence from the clinic (or repeated tardiness) shall be reported to the Program Director. For more details refer to the Student Handbook.

## Hard-to-find studies

The rotation schedule is designed to ensure that students are exposed to a sufficient number of studies and variety to meet the objectives stated herein. Students however must ahead to obtain hard-to-find studies (e.g. GI Bleed, Antibody/Receptor Studies, etc). It is the responsibility of the student to ensure that they prepare in advance for such studies so that they can be completed when the opportunity presents. If a student is nearing the end of the quarter and is deficient in competencies, they may travel to another clinical site with permission from the Clinical Supervisor and Program Director for the day. Simulated studies are not considered an appropriate substitute.

## Only 1 student may comp on a study at a time

Students must work independently. Two or more students shall not be allowed to comp on the same study at the same time. Therapy observations (e.g. I-131) are the only exception. In this case, each student must be independently knowledgeable about the study design, indications, protocol and processing. In general, two or more students rotating through the same site shall work in different areas of the clinic. When a comp is desired by multiple students, preference shall be given to the trainee assigned to that particular area. As a reminder, students are not licensed technologists – Under no circumstances shall one student “teach” a clinical protocol to another student.

## Who can I contact for more information?

Kent Hutchings: (650) 858-3945 or email: [Kent.Hutchings@va.gov](mailto:Kent.Hutchings@va.gov)

# **Contents**

Venipuncture and injection using IV (Angiocath)	7
Venipuncture and injection using a Butterfly needle	8
Department Surveys	9
Package Check-in/out	10
Collimator Change	11
Department Wipes	12
Three Phase Bone Scan*	13
Whole Body Bone Scan	14
Bone SPECT	15
Renogram (without drug)	16
Renal Cortical Imaging*	17
Renogram (Lasix)	18
Renogram (Captopril or Enalapril)*	19
Resting (only) Cardiac Scintigraphy	20
Stress (exercise/pharmacological) Cardiac Scan	21
Hepatobiliary (HIDA) Scan	22
Liver-Spleen Scan*	23
Thyroid Uptake	24
Thyroid Scan	25
Whole Body Radioiodine Scan	26
Radionuclide ventriculography (LVEF assessment) *	27
First-Pass Cardiac Study*	28
Parathyroid Scan	29
Ventilation (Vent) Lung Scan	30
Perfusion (99mTc MAA) Lung Scan	31
R-to-L Shunt (99mTc MAA Scan)*	32
Ultratag Kit Preparation*	33
Gastrointestinal Bleeding Scan *	34
Esophageal Reflux/Transit Study*	35
Gastric Emptying	36
Gallium (Ga-67) Scan*	37
111-In/99mTc HMPAO Leukocyte (WBC) Scan	38
Non-PET Antibody/Receptor Scan* (eg. Prostascint, MIBG)	39
H. Pylori ( <sup>14</sup> C Urea Breath Test)*	40
Red Blood Cell Mass/Volume Study*	41
Splenic Sequestration Scan, Heat Denatured RBCs/Colloid*	42

Brain Death Scintigraphy* (e.g. Tc <sup>99m</sup> HMPAO, EDTA, etc)	43
SPECT Brain Imaging* (e.g. HMPAO, Datscan, etc)	44
Cisternogram*	45
18F-FDG Whole Body PET/CT Scan	46
18F-FDG PET/CT Scan with Iodinated IV Contrast*	47
PET Cardiac Study (e.g. <sup>13</sup> NH <sub>3</sub> , <sup>82</sup> Rb, <sup>18</sup> Flurpiridaz)*	48
PET/CT Brain Scan (e.g. Amyvid, NeuraCeq, F-DOPA)	49
18F-Sodium Fluoride Skeletal PET Scan*	50
Hemangioma Scan*	51
Salivary Gland Imaging Study*	52
Radionuclide Cystography (Vesicoureteral Reflux)*	53
Bone Marrow Scan*	54
Meckel's Diverticulum Study*	55
Lymphoscintigraphy (Sentinel Node Imaging)	56
Varicocele (Scrotal) Scan*	57
PET Receptor Scan (e.g. Ga68-DOTATATE)*	58
PET Prostate Scan (e.g. 18F-Axumin, Ga68-PSMA) *	59
Gamma Camera Uniformity Test (Floods)	61
Gamma Camera Spatial Resolution (Bars)	62
PET/CT Quality Control	63
Gamma Camera Center of Rotation Study	64
Dose Calibrator Accuracy Test	65
Dose Calibrator Constancy Test	66
Dose Calibrator Linearity Test	67
Dose Calibrator Geometry Test*	68
Competencies not requiring signatures (Treadmill)	70
Competencies not requiring signatures (Blood Draws, etc)	71
Competencies not requiring signatures (Other Therapy)	75
VA End of Rotation Evaluations	76
CT Experience for the Nuclear Medicine Technologist	86
DXA (Bone Densitometry)	88

## Venipuncture and injection using IV (Angiocath)

The student technologist shall greet the patient in a courteous manner. An interview with the patient shall be conducted to ensure that the study requested is appropriate. The patient shall receive a thorough explanation of the exam including an estimate of time to completion and potential risks or side effects. The patient history interview shall include a check for contraindications. All consent forms shall be explained and signed. The student technologist shall verify the study on the written request. Prior to injection the student technologist shall verify the patient's identity using at least two methods. A lab coat, gloves and badge/ring dosimeters shall be worn throughout the injection process. The radiopharmaceutical type and activity shall be verified prior to injection. The patient shall be prompted for questions. Proper radiation safety technique shall include the use of appropriate shielding, minimal exposure time and adequate distance maintained compliant with the principles of ALARA.

The student shall have all injection supplies readied including: Drapes, tape, syringe shield, alcohol swabs and 2 x 2s. The tourniquet shall be properly placed. The student shall choose the most appropriate injection site. The injection area shall be prepped with alcohol or disinfectant. The needle shall be introduced at an appropriate angle and advanced to thread the vein. Once the catheterization needle is withdrawn, the IV should be securely fastened and recheck for patency prior to injection. The dose shall be delivered in the appropriate manner (e.g. bolus versus slow infusion). When appropriate, the syringe shall be thoroughly rinsed. The tourniquet must be removed promptly.

At no time shall the needle be recapped with two hands. Nor shall any portion of the dose or patient's blood be allowed to drip in an uncontrolled fashion. The injection will not be considered complete until imaging is initiated, and the residual activity is measured and recorded (if required). The needle shall be disposed of in the appropriate sharp's container. Radiation safety and safe handling techniques are of paramount importance.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

# Venipuncture and injection using a Butterfly needle

The student technologist shall greet the patient in a courteous manner. An interview with the patient shall be conducted to ensure that the study requested is appropriate. The patient shall receive a thorough explanation of the exam including an estimate of time to completion and potential risks or side effects. The patient history interview shall include a check for contraindications. All consent forms shall be explained and signed. The student technologist shall verify the study on the written request. Prior to injection the student technologist shall verify the patient's identity using at least two methods. A lab coat, gloves and badge/ring dosimeters shall be worn throughout the injection process. The radiopharmaceutical type and activity shall be verified prior to injection. The patient shall be prompted for questions. Proper radiation safety technique shall include the use of appropriate shielding, minimal exposure time and adequate distance maintained compliant with the principles of ALARA.

The student shall have all injection supplies readied including: Butterfly pre-filled with saline, drapes, tape, syringe shield, alcohol swabs and 2 x 2s. The tourniquet shall be properly placed. The student shall choose the most appropriate injection site. The injection area shall be prepped with alcohol or disinfectant. The needle shall be introduced at an appropriate angle and advanced to thread the vein. The butterfly shall be adequately secured. Prior to injection the blood return shall be assessed. The dose shall be delivered in the appropriate manner (e.g. bolus versus slow infusion). The residual volume within the butterfly tubing shall be thoroughly flushed with saline. The tourniquet must be removed in a timely fashion. The student technologist shall withdraw the need in a safe manner while maintaining a bandage at the injection site.

The butterfly shall be locked following injection to prevent an accidental needle stick. No portion of the dose or patient's blood shall be allowed to drip in an uncontrolled fashion. The injection will not be considered complete until imaging is initiated, and the residual activity is measured and recorded. The needle shall be disposed of in the appropriate sharp's container. Radiation safety and safe needle handling techniques are of paramount importance.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---



# Department Surveys

The student shall perform a battery check, verify the instrument is within calibration and assure an accurate reading against the dedicated check source. Before initiating the survey, the student shall take a background measurement to be subtracted from subsequent readings. All areas indicated on the department survey map shall be surveyed. The survey meter probe shall be passed at an appropriate rate and distance from each surface. Both audio and visual cues shall be used. The student technologist must use the appropriate scale and select the proper 'f/s' setting as required. The student shall accurately record each reading on the appropriate form using proper units. The students must state when and how often such surveys are performed in a nuclear medicine department. The student shall also have knowledge of the frequency with which GM counters are to be calibrated.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:**

[http://adamswebsearch2.nrc.gov/idmws/doccontent.dll?library=PU\\_ADAMS^PBNTAD01&ID=003956778](http://adamswebsearch2.nrc.gov/idmws/doccontent.dll?library=PU_ADAMS^PBNTAD01&ID=003956778)

# Package Check-in/out

The student shall inspect each package for exterior damage prior to performing the survey. An exterior survey shall be performed with a GM counter followed by an external wipe. The student shall have knowledge of applicable limits.

Once the package is opened, an internal wipe should be obtained before removing the dose. All measurements must be recorded in the department log.

Prior to disposal, all radiation placards must be removed or defaced. A final survey and wipe shall be recorded before removal of any reusable containers from the department. No contaminated pigs or ammo cans shall be returned to service.

The student shall have knowledge of department procedures regarding who can legally accept a package containing radioactive materials. In addition, the student technologist shall be aware of the limits associated with White I, Yellow II and Yellow III radiation placards when surveying against the surface and at 1 meter.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:**

<http://www.nrc.gov/reading-rm/doc-collections/cfr/part020/part020-1906.html>

<http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1556/v7/haz06.html>

[http://www.stanford.edu/dept/EHS/prod/researchlab/radlaser/manual/rad\\_safety\\_manual\\_2004.pdf](http://www.stanford.edu/dept/EHS/prod/researchlab/radlaser/manual/rad_safety_manual_2004.pdf)

# Collimator Change

Collimator change competency requires both removal and instillation of a complete set of collimators. The student shall identify the appropriate collimator based on their knowledge of:

- The energy of the nuclide
- The need for sensitivity vs. resolution
- The need to magnify or minify an area of interest
- The need for a flat-field response from an organ

The student shall also have knowledge of the impact of imaging distance on resolution and sensitivity in a given study.

Before loading the new set of collimators, the student technologist must visually inspect the collimator and bare camera surface for damage. During the collimator change, the student must maintain visual inspection of any automatic camera motion to ensure safety throughout the procedure. All locking devices shall be secured and rechecked prior to patient imaging.

Following the collimator change, the collimator stand must be securely stowed in a designated location. If moved, the imaging table must be locked back in the active position before loading a patient.

The entire procedure must be carried out in a timely fashion. Before imaging, the student technologist should check the persistence-scope to ensure the collimator is free from contamination.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

Reference: <https://radiopaedia.org/articles/collimator-gamma-camera?lang=us>

# Department Wipes

The student shall use proper wipe technique over an appropriately sized area. Individual wipes shall be kept in separate (labeled) containers. Care shall be taken not to transfer contamination between wipes.

Individual wipes shall be counted in a well counter or other suitable device to ascertain total counts or count rate for each wipe. The results shall be recorded by the student technologist in the department log. Contaminated wipes shall be disposed of in the radioactive waste container.

The student shall have knowledge of the dimensions of the wipe area, the wipe count limit and the procedure used to clean a contaminated area should the wipe exceed its limit. The student technologist shall also be aware of the frequency with which wipe tests should be performed in a nuclear medicine department.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** <https://www.nrc.gov/docs/ML0037/ML003739603.pdf>

## Three Phase Bone Scan\*

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. Imaging shall begin and end in a timely manner. A bolus injection technique must be employed. The correct collimator and computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. Routine views shall include dynamic, static or SPECT images using appropriate projection(s) for the indicated time/counts. Markers or transmission images shall be used when indicated. For a complete 3-Phase Bone study, blood-flow images, immediate blood pool images and delayed images shall be performed. The time between injection and delayed static imaging shall be appropriate given the patient's age/health and departmental protocol. The patient shall be counseled on appropriate measures to reduce radiation exposure to the bladder. Upon return, the student technologist shall instruct the patient to empty their bladder immediately prior to imaging.

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall be aware of the general characteristics that differentiate normal from abnormal biodistribution and uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Appropriate communications shall be maintained with the patient throughout the exam. Every effort shall be made to ensure patient comfort and safety. The student technologist shall review patient expectations and provide an anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** [http://interactive.snm.org/docs/pg\\_ch34\\_0403.pdf](http://interactive.snm.org/docs/pg_ch34_0403.pdf)

# Whole Body Bone Scan

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. Imaging shall begin and end in a timely manner. The correct collimator and computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. Routine views shall include static whole-body images using appropriate projection(s) for the indicated time/counts. Markers or transmission images shall be used when indicated. The time between injection and delayed static imaging shall be appropriate given the patient's age/health and departmental protocol. The patient shall be counseled on appropriate measures to reduce radiation exposure to the bladder. Upon return, the student technologist shall instruct the patient to empty their bladder immediately prior to imaging.

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall be aware of the general characteristics that differentiate normal from abnormal biodistribution and uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Appropriate communications shall be maintained with the patient throughout the exam. Every effort shall be made to ensure patient comfort and safety. The student technologist shall review patient expectations and provide an anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** [http://interactive.snm.org/docs/pg\\_ch34\\_0403.pdf](http://interactive.snm.org/docs/pg_ch34_0403.pdf)

# Bone SPECT

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. Imaging shall begin and end in a timely manner. The correct collimator and computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. Routine views shall include SPECT images using appropriate proximity and field of view for the indicated time or counts per projection. Markers or transmission images shall be used when indicated. The time between injection and delayed static imaging shall be appropriate given the patient's age/health and departmental protocol. The patient shall be counseled on appropriate measures to reduce radiation exposure to the bladder. Upon return, the student technologist shall instruct the patient to empty their bladder immediately prior to imaging.

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall be aware of the general characteristics that differentiate normal from abnormal biodistribution and uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Appropriate communications shall be maintained with the patient throughout the exam. Every effort shall be made to ensure patient comfort and safety. The student technologist shall review patient expectations and provide an anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** [http://interactive.snm.org/docs/pg\\_ch34\\_0403.pdf](http://interactive.snm.org/docs/pg_ch34_0403.pdf)

# Renogram (without drug)

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. Imaging shall begin and end in a timely manner. A bolus injection must be employed. The correct collimator and computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. Routine views shall include dynamic, static or SPECT images using appropriate projection(s) for the indicated time/counts. Markers or transmission images shall be used when indicated.

In the event that an ERPF is to be calculated, the student shall draw the patients' blood from an appropriate site in a timely fashion. The blood sample shall be centrifuged and an aliquot of the appropriate layer dispensed using proper pipetting technique. The sample shall be counted according to departmental protocols and the result shall be incorporated in the final ERPF calculation. The student shall make every effort to ensure that each measurement and calculation is accurate by comparing sample volumes, cross-referencing with previous ERPF results, etc.

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. An ROI must be drawn around the kidney for the generation of a time/activity curve. The student shall be aware of the general characteristics that differentiate normal from abnormal biodistribution and uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Appropriate communications shall be maintained with the patient throughout the exam. Every effort shall be made to ensure patient comfort and safety. The student technologist shall review patient expectations and provide an anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

**Reference:** [www.acr.org/SecondaryMainMenuCategories/quality\\_safety/guidelines/nuc\\_med/renal\\_scintigraphy.aspx](http://www.acr.org/SecondaryMainMenuCategories/quality_safety/guidelines/nuc_med/renal_scintigraphy.aspx)



# Renal Cortical Imaging\*

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. Imaging shall begin and end in a timely manner. The correct collimator and computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. Routine views shall include dynamic, static or SPECT images using appropriate projection(s) for the indicated time/counts. Markers or transmission images shall be used when indicated.

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall be aware of the general characteristics that differentiate normal from abnormal biodistribution and uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Appropriate communications shall be maintained with the patient throughout the exam. Every effort shall be made to ensure patient comfort and safety. The student technologist shall review patient expectations and provide an anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** [http://interactive.snm.org/docs/pg\\_ch32\\_0403.pdf](http://interactive.snm.org/docs/pg_ch32_0403.pdf)

# Renogram (Lasix)

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. Imaging shall begin and end in a timely manner. A bolus injection must be employed. The correct dosage of lasix shall be administered as indicated. The correct collimator and computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. Routine views shall include dynamic, static or SPECT images using appropriate projection(s) for the indicated time/counts. Markers or transmission images shall be used when indicated.

In the event that an ERPF is to be calculated, the student shall draw the patients' blood from an appropriate site in a timely fashion. The blood sample shall be centrifuged and an aliquot of the appropriate layer dispensed using proper pipetting technique. The sample shall be counted according to departmental protocols and the result shall be incorporated in the final ERPF calculation. The student shall make every effort to ensure that each measurement and calculation is accurate by comparing sample volumes, cross-referencing with previous ERPF results, etc.

Processing shall include necessary filtering, image contrast adjustment and labeling (including the time for lasix injection). Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. An ROI must be drawn around the kidney for the generation of a time/activity curve. The student shall be aware of the general characteristics that differentiate normal from abnormal biodistribution and uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Appropriate communications shall be maintained with the patient throughout the exam. Every effort shall be made to ensure patient comfort and safety. The student technologist shall review patient expectations and provide an anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

**Reference:** [http://interactive.snm.org/docs/pg\\_ch16\\_0403.pdf](http://interactive.snm.org/docs/pg_ch16_0403.pdf)

# Renogram (Captopril or Enalapril)\*

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. Imaging shall begin and end in a timely manner. The correct concentration of Captopril/Enalapril shall be administered as indicated. Blood Pressure measurements shall be taken at appropriate time intervals.

A bolus injection shall be employed (if indicated). The correct collimator and computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. Routine views shall include dynamic, static or SPECT images using appropriate projection(s) for the indicated time/counts. Markers or transmission images shall be used when indicated. Appropriate communications shall be maintained with the patient throughout the exam.

In the event that an ERPF is to be calculated, the student shall draw the patient's blood from an appropriate site in a timely fashion. The blood sample shall be centrifuged and an aliquot of the appropriate layer dispensed using proper pipetting technique. The sample shall be counted according to departmental protocols and the result shall be incorporated in the final ERPF calculation. The student shall make every effort to ensure that each measurement and calculation is accurate by comparing sample volumes, cross-referencing with previous ERPF results, etc.

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall be aware of the general characteristics that differentiate normal from abnormal biodistribution and uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Every effort shall be made to ensure patient comfort and safety. The student technologist shall review patient expectations and anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

**Reference:** [http://interactive.snm.org/docs/pg\\_ch16\\_0403.pdf](http://interactive.snm.org/docs/pg_ch16_0403.pdf)

# Resting (only) Cardiac Scintigraphy

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. The technologist shall review the procedure with the patient before obtaining a signed consent form. Imaging shall begin and end in a timely manner. The correct collimator and computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. Routine views shall include dynamic, static or SPECT images using appropriate projection(s) for the indicated time/counts.

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. If Thallium is employed to assess possible hibernating myocardium, the student shall have knowledge of the redistribution mechanism that allows visualization at the 24-hour interval.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Appropriate communications shall be maintained with the patient throughout the exam. Every effort shall be made to ensure patient comfort and safety. The student technologist shall review patient expectations and anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients.

At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** [http://interactive.snm.org/docs/pg\\_ch02\\_0403.pdf](http://interactive.snm.org/docs/pg_ch02_0403.pdf)

# Stress (exercise/pharmacological) Cardiac Scan

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. The technologist shall verify the consent form was properly signed before the stress study. Imaging shall begin and end in a timely manner. The correct collimator and computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. Routine views shall include dynamic, static or SPECT images using appropriate projection(s) for the indicated time/counts. Leads shall be placed in a manner that allows for an optimal gate.

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall be aware of the general characteristics that differentiate normal from abnormal biodistribution and uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Appropriate communications shall be maintained with the patient throughout the exam. Every effort shall be made to ensure patient comfort and safety. The student technologist shall review patient expectations and anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients.

At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** [http://interactive.snm.org/docs/pg\\_ch02\\_0403.pdf](http://interactive.snm.org/docs/pg_ch02_0403.pdf)

# Hepatobiliary (HIDA) Scan

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. Imaging shall begin and end in a timely manner. The correct collimator and computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. Routine views shall include dynamic, static or SPECT images using appropriate projection(s) for the indicated time/counts. The student shall take delayed images as needed.

If a gall bladder ejection fraction is to be performed, the student shall administer the appropriate non-radioactive pharmaceutical and perform dynamic images according to department protocol. The student shall have knowledge of the factors that distinguish acute cholecystitis from chronic, as well as of the normal range for a gall-bladder ejection fraction. The student should also have knowledge of the indications for use of morphine and the expected physiologic response.

Processing shall include necessary filtering, image contrast adjustment and labeling. ROI shall be appropriately drawn to calculate a gall-bladder ejection fraction (if performed). Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall be aware of the general characteristics that differentiate normal from abnormal biodistribution and uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Appropriate communications shall be maintained with the patient throughout the exam. Every effort shall be made to ensure patient comfort and safety. The student technologist shall review patient expectations and anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients.

At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

**Reference:** [http://interactive.snm.org/docs/pg\\_ch11\\_0703.pdf](http://interactive.snm.org/docs/pg_ch11_0703.pdf)

# Liver-Spleen Scan\*

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. Imaging shall begin and end in a timely manner. The correct collimator and computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. Routine views shall include dynamic, static or SPECT images using appropriate projection(s) for the indicated time/counts. When required, the student shall place a marker to aid in the determination of the size and location of the liver or spleen.

Processing shall include necessary filtering, image contrast adjustment and labeling. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall be aware of the general characteristics that differentiate normal from abnormal biodistribution and uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Every effort shall be made to ensure patient comfort and safety. Appropriate communications shall be maintained with the patient throughout the exam. The student technologist shall review patient expectations and provide an anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** [http://interactive.snm.org/docs/pg\\_ch10\\_0403.pdf](http://interactive.snm.org/docs/pg_ch10_0403.pdf)

# Thyroid Uptake

The student technologist shall greet and identify the patient in a courteous fashion. Prior to dosing, the student shall ensure that the patient has complied with all preparatory requirements. The student technologist shall review patient expectations and anticipated time for imaging. The student shall administer the dose and instruct the patient of their return time.

Upon return of the patient, the uptake measurement shall begin and end in a timely manner. The patient shall be asked to remove attenuating or restrictive objects. The correct computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. The uptake study shall be performed for the indicated time/counts.

Processing shall include a thyroid uptake calculation relative to background (thigh) counts. The student shall have knowledge of the normal uptake range for 4- and 24-hour studies.

The student technologist shall demonstrate appropriate levels of patient care throughout the uptake procedure. Every effort shall be made to ensure patient comfort and safety. Appropriate communications shall be maintained with the patient throughout the exam. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** <http://interactive.snm.org/docs/Thyroid%20Uptake%20Measure%20v3%200.pdf>



# Thyroid Scan

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. The patient shall be asked to remove attenuating or restrictive objects. Imaging shall begin and end in a timely manner. The correct collimator and computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. Routine views shall include dynamic, static or SPECT images using appropriate projection(s) for the indicated time/counts. The student shall take delayed images as needed.

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall have a working knowledge of the characteristics that distinguish normal versus abnormal biodistribution/uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the uptake procedure. Every effort shall be made to ensure patient comfort and safety. Appropriate communications shall be maintained with the patient throughout the exam. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** [http://interactive.snm.org/docs/pg\\_ch05\\_0403.pdf](http://interactive.snm.org/docs/pg_ch05_0403.pdf)

# Whole Body Radioiodine Scan

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. The patient shall be asked to remove attenuating or restrictive objects. Imaging shall begin and end in a timely manner. The correct collimator and computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. Routine views shall include dynamic, static or SPECT images using appropriate projection(s) for the indicated time/counts. The student shall take delayed images as needed.

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall have a working knowledge of the characteristics that distinguish normal versus abnormal biodistribution/uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the uptake procedure. Every effort shall be made to ensure patient comfort and safety. Appropriate communications shall be maintained with the patient throughout the exam. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** [http://interactive.snm.org/docs/Scintigraphy%20for%20Differentiated%20Thyroid%20Cancer%20V3%200%20\(9-25-06\).pdf](http://interactive.snm.org/docs/Scintigraphy%20for%20Differentiated%20Thyroid%20Cancer%20V3%200%20(9-25-06).pdf)

# Radionuclide ventriculography (LVEF assessment) \*

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. Imaging shall begin and end in a timely manner. The correct collimator and computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. The student shall place electrodes in appropriate locations and ensure proper gating. Routine views shall include dynamic, static or SPECT images using appropriate projection(s) for the indicated time/counts. Markers or transmission images shall be used when indicated.

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall have a working knowledge of the characteristics that distinguish normal versus abnormal biodistribution/uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Every effort shall be made to ensure patient comfort and safety. Appropriate communications shall be maintained with the patient throughout the exam. The student technologist shall review patient expectations and anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** [http://interactive.snm.org/docs/pg\\_ch01\\_0403.pdf](http://interactive.snm.org/docs/pg_ch01_0403.pdf)

# First-Pass Cardiac Study\*

First pass cardiac studies shall include RVEF and/or L→R shunt assessment. The student shall have an understanding of normal venous flow through the right ventricle and the expected appearance of the time/activity curves in normal and abnormal patients.

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. Imaging shall begin and end in a timely manner. The correct collimator and computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. The student shall place electrodes in appropriate locations and ensure proper gating. Routine views shall include dynamic, static or SPECT images using appropriate projection(s) for the indicated time/counts. Markers or transmission images shall be used when indicated.

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student should know the expected range for a normal RVEF.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Every effort shall be made to ensure patient comfort and safety. Appropriate communications shall be maintained with the patient throughout the exam. The student technologist shall review patient expectations and anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** [http://interactive.snm.org/docs/pg\\_ch01\\_0403.pdf](http://interactive.snm.org/docs/pg_ch01_0403.pdf)

# Parathyroid Scan

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. Imaging shall begin and end in a timely manner. The correct collimator and computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. Routine views shall include dynamic, static or SPECT images using appropriate projection(s) for the indicated time/counts. Markers or transmission images shall be used when indicated.

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall have a working knowledge of the characteristics that distinguish normal versus abnormal biodistribution/uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Every effort shall be made to ensure patient comfort and safety. Appropriate communications shall be maintained with the patient throughout the exam. The student technologist shall review patient expectations and anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients.

At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** [http://interactive.snm.org/docs/Parathyroid\\_v3.0.pdf](http://interactive.snm.org/docs/Parathyroid_v3.0.pdf)

# Ventilation (Vent) Lung Scan

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. Imaging shall begin and end in a timely manner. The correct collimator and computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. Routine views shall include dynamic, static or SPECT images using appropriate projection(s) for the indicated time/counts. Markers or transmission images shall be used when indicated.

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall have a working knowledge of the characteristics that distinguish normal versus abnormal biodistribution/uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Every effort shall be made to ensure patient comfort and safety. Appropriate communications shall be maintained with the patient throughout the exam. The student technologist shall review patient expectations and anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** [http://interactive.snm.org/docs/Lung%20Scintigraphy\\_v3.0.pdf](http://interactive.snm.org/docs/Lung%20Scintigraphy_v3.0.pdf)

# Perfusion (99mTc MAA) Lung Scan

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. Imaging shall begin and end in a timely manner. The correct collimator and computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. Routine views shall include dynamic, static or SPECT images using appropriate projection(s) for the indicated time/counts. Markers or transmission images shall be used when indicated.

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall have a working knowledge of the characteristics that distinguish normal versus abnormal biodistribution/uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Every effort shall be made to ensure patient comfort and safety. Appropriate communications shall be maintained with the patient throughout the exam. The student technologist shall review patient expectations and anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** [http://interactive.snm.org/docs/Lung%20Scintigraphy\\_v3.0.pdf](http://interactive.snm.org/docs/Lung%20Scintigraphy_v3.0.pdf)

## R-to-L Shunt (99mTc MAA Scan)\*

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. Imaging shall begin and end in a timely manner. The correct collimator and computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. Routine views shall include dynamic, static or SPECT images using appropriate projection(s) for the indicated time/counts. Markers or transmission images shall be used when indicated.

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall have a working knowledge of the characteristics that distinguish normal versus abnormal biodistribution/uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Every effort shall be made to ensure patient comfort and safety. Appropriate communications shall be maintained with the patient throughout the exam. The student technologist shall review patient expectations and anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** [http://interactive.snm.org/docs/Lung%20Scintigraphy\\_v3.0.pdf](http://interactive.snm.org/docs/Lung%20Scintigraphy_v3.0.pdf)



# Ultratag Kit Preparation\*

The student must withdraw, prepare and reinject the patient's blood using principles of ALARA and Universal Precautions. The blood shall be labeled in accordance with the Ultratag protocol supplied on the package insert. Care must be taken to heparinize all syringes containing blood. The needle shall be of a suitable bore to prevent cell lysis.

During the radiolabeling process, only fresh eluate shall be used for tagging as described in the manufacturer's literature. The student shall have a basic knowledge of the mechanism by which the pertechnetate labels the red blood cell.

If required, witness signatures must be gathered to ensure safe management of the patient's blood. All vials containing patient's blood must be labeled. At no time shall blood be administered to a patient without proper verification of the patient's identification. The radiolabeled blood shall be reinjected in a timely manner.

Upon completion the student technologist shall dispose of all needles and waste in the designated sharps/radioactive waste bins. The preparation area shall be surveyed for contamination. Blood spills must be cleaned using an approved sanitizing agent. The student technologist shall inject the appropriate dose according to department protocol. If required, residual activity must be noted in the radiopharmacy log.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** [http://www.imaging.mallinckrodt.com/\\_Attachments/PackageInserts/Ultratag%20RBC%20PI.pdf](http://www.imaging.mallinckrodt.com/_Attachments/PackageInserts/Ultratag%20RBC%20PI.pdf)

# Gastrointestinal Bleeding Scan \*

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. Imaging shall begin and end in a timely manner. The correct collimator and computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. Routine views shall include dynamic, static or SPECT images using appropriate projection(s) for the indicated time/counts. Markers or transmission images shall be used when indicated.

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall have a working knowledge of the characteristics that distinguish normal versus abnormal biodistribution/uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Every effort shall be made to ensure patient comfort and safety. Appropriate communications shall be maintained with the patient throughout the exam. The student technologist shall review patient expectations and anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** [http://interactive.snm.org/docs/pg\\_ch09\\_0403.pdf](http://interactive.snm.org/docs/pg_ch09_0403.pdf)

# Esophageal Reflux/Transit Study\*

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements.

The orally administered tracer shall be prepared according to departmental protocol and administered appropriately to allow subsequent dynamic imaging of the upper GI tract. The patient shall receive appropriate instructions regarding the internalization of the radiopharmaceutical and subsequent swallowing steps required for optimal transit. Abdominal binders (if required) shall be placed and operated in accordance with departmental procedures.

Imaging shall begin and end in a timely manner. The correct collimator and computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. Routine views shall include dynamic, static or SPECT images using appropriate projection(s) for the indicated time/counts. Markers or transmission images shall be used when indicated.

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall have a working knowledge of the characteristics that distinguish normal versus abnormal biodistribution/uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Every effort shall be made to ensure patient comfort and safety. Appropriate communications shall be maintained with the patient throughout the exam. The student technologist shall review patient expectations and anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** <http://www.auntminnie.com/index.asp?sec=ref&sub=ncm&pag=gas&itemid=54757>

# Gastric Emptying

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements.

The egg and associated ingredients shall be prepared according to department protocol. If a change is made in the food preparation or ingredient list, the student technologist must chart for the interpreting physician. The student technologist must ensure that the patient consumes the egg in a timely manner. Note that for some patients, liquid preps may be a more appropriate substitute.

Imaging shall begin and end in a timely manner. The correct collimator and computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. Routine views shall include dynamic, static or SPECT images using appropriate projection(s) for the indicated time/counts. Markers or transmission images shall be used when indicated.

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall have a working knowledge of the characteristics that distinguish normal versus abnormal biodistribution/uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Every effort shall be made to ensure patient comfort and safety. Appropriate communications shall be maintained with the patient throughout the exam. The student technologist shall review patient expectations and anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** [http://interactive.snm.org/docs/pg\\_ch08\\_0403.pdf](http://interactive.snm.org/docs/pg_ch08_0403.pdf)

# Gallium (Ga-67) Scan\*

Non-PET Ga67 scans have historically been used for imaging of cancers, infections, inflammations, sarcoidosis, kidney disease and as the liquid component for solid vs liquid gastric emptying studies. Ga68 PET studies are covered in other competencies.

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. Imaging shall begin and end in a timely manner. The correct collimator and computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. Routine views shall include dynamic, static or SPECT images using appropriate projection(s) for the indicated time/counts. Markers or transmission images shall be used when indicated.

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall have a working knowledge of the characteristics that distinguish normal versus abnormal biodistribution/uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Every effort shall be made to ensure patient comfort and safety. Appropriate communications shall be maintained with the patient throughout the exam. The student technologist shall review patient expectations and anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** [http://interactive.snm.org/docs/pg\\_ch23\\_0403.pdf](http://interactive.snm.org/docs/pg_ch23_0403.pdf)  
[http://interactive.snm.org/docs/Gallium\\_Scintigraphy\\_in\\_Inflammation\\_v3.pdf](http://interactive.snm.org/docs/Gallium_Scintigraphy_in_Inflammation_v3.pdf)

# 111-In/99mTc HMPAO Leukocyte (WBC) Scan

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. Imaging shall begin and end in a timely manner. The correct collimator and computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. Routine views shall include dynamic, static or SPECT images using appropriate projection(s) for the indicated time/counts. Markers or transmission images shall be used when indicated.

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall have a working knowledge of the characteristics that distinguish normal versus abnormal biodistribution/uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Every effort shall be made to ensure patient comfort and safety. Appropriate communications shall be maintained with the patient throughout the exam. The student technologist shall review patient expectations and anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** (In-111 WBC): [http://interactive.snm.org/docs/Leukocyte\\_v3.pdf](http://interactive.snm.org/docs/Leukocyte_v3.pdf)

**Reference:** (HMPAO WBC): [http://interactive.snm.org/docs/HMPAO\\_v3.pdf](http://interactive.snm.org/docs/HMPAO_v3.pdf)

## Non-PET Antibody/Receptor Scan\* (eg. Prostascint, MIBG)

Antibody/Receptor imaging competencies include all diagnostic studies involving the use of an antibody, an antibody fragment, a neuropeptide/hormone or any other peptide derivative linked to a radioactive tracer. These include (but are not limited to): Octreoscan, MIBG, Prostascint, Oncoscint and CEA scan.

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. Imaging shall begin and end in a timely manner. The correct collimator and computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. Routine views shall include dynamic, static or SPECT images using appropriate projection(s) for the indicated time/counts. Markers or transmission images shall be used when indicated.

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall have a working knowledge of the characteristics that distinguish normal versus abnormal biodistribution/uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Every effort shall be made to ensure patient comfort and safety. Due to the slightly increase in anaphylactic response, the student must ensure that all transfusions will be administered in clinical areas where appropriate medications, equipment ("crash cart"), and trained personnel are readily available. Appropriate communications shall be maintained with the patient throughout the exam. The student technologist shall review patient expectations and anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** Octreotide): [http://interactive.snm.org/docs/pg\\_ch27\\_0403.pdf](http://interactive.snm.org/docs/pg_ch27_0403.pdf)

## H. Pylori (<sup>14</sup>C Urea Breath Test)\*

The student technologist shall be familiar with department procedures, the package insert, theory and procedures for <sup>14</sup>C Urea Breath Test including pharmacology, indications, administration procedure, laboratory analysis method and interpretation of results. Research and be aware of other testing modalities for H-Pylori (<sup>13</sup>C mass spectroscopy, ELISA serology, histology and stool antigen).

The student technologist shall greet and identify the patient in a courteous fashion. Prior to administering the dose, the student shall ensure that the patient has complied with all preparatory requirements. Properly labeled the breath container (balloon) and complete paperwork for lab analysis.

The study shall begin and end in a timely manner.

When the lab results return, the student shall complete the study according to department protocol. The student shall have a working knowledge of the characteristics that distinguish a normal from an abnormal result.

The student technologist shall demonstrate appropriate levels of patient care throughout the procedure. Every effort shall be made to ensure patient comfort and safety. Appropriate communications shall be maintained with the patient throughout the exam. The student technologist shall review patient expectations and anticipated time for results.

Upon completion, the student technologist shall clean the laboratory area and prepare as needed for subsequent studies. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** [http://interactive.snm.org/docs/pg\\_ch07\\_0403.pdf](http://interactive.snm.org/docs/pg_ch07_0403.pdf)



# Red Blood Cell Mass/Volume Study\*

The student must handle the patient's blood using principles of ALARA and Universal Precautions. The blood shall be labeled in accordance with department protocol. Care must be taken to heparinize all syringes containing blood. The needle shall be of a suitable bore to prevent cell lysis.

The student shall have a basic knowledge of the mechanism by which Cr-51 or other labeling agents localizes with the red blood cell. Students must also have a basic understanding of the function each reagent has during labeling.

The student must take care to maintain a uniform cell distribution throughout the study to avoid clots, agglutinations or other anomalies that may cause erroneous results. The student technologist must check for potential contraindications (e.g. antibiotics or polyvitamin use, blood transfusions, etc.). The student must derive the RBC mass using an appropriate formula. If required, the student shall use the data to calculate total blood volume, plasma volume or plasmacrit.

Should the RBC survival be calculated in conjunction, the patient shall be instructed to return for regular blood draws over the next 2 – 3 weeks. The percent tag (as a percent of Day 1 red cells counts) shall be calculated and a graph shall be plotted to determine the red cell survival half-time. The student shall have knowledge of normal values or ranges for blood cell mass and survival.

Upon completion the student technologist shall dispose of all needles and waste in the designated sharps/radioactive waste bins. The preparation area shall be surveyed for contamination. Blood spills must be cleaned using an approved sanitizing agent.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** <http://www.auntminnie.com/index.asp?Sec=ref&sub=ncm&pag=dis&ItemId=62855>  
<http://www.crump.ucla.edu/nm-mediabook/protocols/bloodvol.html>

## Splenic Sequestration Scan, Heat Denatured RBCs/Colloid\*

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. Imaging shall begin and end in a timely manner. The correct collimator and computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. Routine views shall include dynamic, static or SPECT images using appropriate projection(s) for the indicated time/counts. When required, the student shall place a marker to aid in the determination of the size and location of the liver or spleen.

Processing shall include necessary filtering, image contrast adjustment and labeling. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall be aware of the general characteristics that differentiate normal from abnormal biodistribution and uptake, including the different distribution for heat-denatured RBCs vs untreated RBCs. Students should also have a working knowledge of accessory spleen and/or splenosis and the risk factors associated with these conditions.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Every effort shall be made to ensure patient comfort and safety. Appropriate communications shall be maintained with the patient throughout the exam. The student technologist shall review patient expectations and provide an anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** [http://snmmi.files.cms-plus.com/docs/pg\\_ch10\\_0403.pdf](http://snmmi.files.cms-plus.com/docs/pg_ch10_0403.pdf)

# Brain Death Scintigraphy\* (e.g. Tc<sup>99m</sup> HMPAO, EDTA, etc)

The student technologist shall identify the patient/parents in an appropriate fashion. The patient shall be prepared according to protocol. The correct computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. All attenuating or restrictive objects shall be removed for the scan. All wires and tubes shall be secured. The student shall have detailed knowledge of the procedure being performed including indications, patient prep, precautions/contraindications, radiopharmaceutical dose (and dilution factor if required), route of administration, injection technique, acquisition parameters and interventions/non-radioactive pharmaceuticals (if required).

Processing shall include necessary filtering, image contrast adjustment and labeling. ROIs shall be drawn (if required), to obtain time-activity curves to measure accumulation and clearance of activity. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations related documentation shall be verified by the supervising technologist and submitted to the interpreting physician. Additional views shall be taken when requested. The student shall have a working knowledge of the characteristics that distinguish normal versus abnormal blood flow in the brain.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Appropriate communications shall be maintained with the patient's representatives throughout the exam. Every effort shall be made to ensure patient comfort and safety. The student technologist shall review the patient advocate's expectations and provide an anticipated time for imaging. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

## SPECT Brain Imaging\* (e.g. HMPAO, Datscan, etc)

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be maintained in a quiet, darkened environment according to department protocol. Imaging shall begin and end in a timely manner. The correct collimator and computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. Routine views shall include dynamic, static or SPECT images using appropriate projection(s) for the indicated time/counts.

If the administration of diamox is required, the student shall be familiar with time of administration and anticipated physiologic response. Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall have a working knowledge of the characteristics that distinguish normal versus abnormal biodistribution/uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the uptake procedure. Every effort shall be made to ensure patient comfort and safety. Appropriate communications shall be maintained with the patient throughout the exam. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** [http://interactive.snm.org/docs/pg\\_ch21\\_0403.pdf](http://interactive.snm.org/docs/pg_ch21_0403.pdf)

# Cisternogram\*

The student technologist shall perform diagnostic evaluation of CSF flow following administration of a radiopharmaceutical by a licensed physician. The student is encouraged but not required to observe the administration of the radio-isotope. Indications for this study include, but are not limited to: Normal pressure hydrocephalus and VP shunt assessment.

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements.

Imaging shall begin and end in a timely manner. The correct collimator and computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. Routine views shall include dynamic, static or SPECT images using appropriate projection(s) for the indicated time/counts.

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall have a working knowledge of the characteristics that distinguish normal versus abnormal biodistribution/uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the uptake procedure. Every effort shall be made to ensure patient comfort and safety. Appropriate communications shall be maintained with the patient throughout the exam. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** <http://www.crump.ucla.edu/nm-mediabook/protocols/cistern.html>

# 18F-FDG Whole Body PET/CT Scan

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. The student shall obtain a blood sugar reading if required prior to injection. Following administration, the student shall instruct the patient to remain quiet. Imaging shall begin and end in a timely manner. The correct computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. The student shall have knowledge of positron annihilation physics as well as concept of transmission scanning (when performed).

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall be aware of the general characteristics that differentiate normal from abnormal biodistribution and uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Every effort shall be made to ensure patient comfort and safety. Appropriate communications shall be maintained with the patient throughout the exam. The student technologist shall review patient expectations and anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** <http://www.auntminnie.com/index.asp?Sec=ref&sub=ncm&pag=dis&ItemId=79634>

# 18F-FDG PET/CT Scan with Iodinated IV Contrast\*

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. The student shall obtain a blood sugar reading if required prior to injection. Following administration, the student shall instruct the patient to remain quiet. Imaging shall begin and end in a timely manner. The correct computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. The student shall have knowledge of positron annihilation physics as well as concept of transmission scanning (when performed).

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall be aware of the general characteristics that differentiate normal from abnormal biodistribution and uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Every effort shall be made to ensure patient comfort and safety. Appropriate communications shall be maintained with the patient throughout the exam. The student technologist shall review patient expectations and anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** <http://cme.medscape.com/viewarticle/501810>

## PET Cardiac Study (e.g. $^{13}\text{NH}_3$ , $^{82}\text{Rb}$ , $^{18}\text{Flurpiridaz}$ )\*

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. Imaging shall begin and end in a timely manner. The correct computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. The student shall have knowledge of positron annihilation physics as well as concept of transmission scanning (when performed).

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall be aware of the general characteristics that differentiate normal from abnormal biodistribution and uptake. The student shall also be aware of the differences in distribution patterns following injection of a metabolic tracer like  $^{18}\text{F}$ -FDG.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Every effort shall be made to ensure patient comfort and safety. Appropriate communications shall be maintained with the patient throughout the exam. The student technologist shall review patient expectations and anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** <http://www.auntminnie.com/index.asp?Sec=ref&sub=ncm&pag=dis&ItemId=79635>



## PET/CT Brain Scan (e.g. Amyvid, NeuraCeq, F-DOPA)

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. The student shall measure blood glucose levels (if required). The patient shall be placed in a comfortable, quiet and dimly lit area prior to administration. Radiopharmaceutical administration shall take place while the patient remains in the resting state. Imaging shall begin after the uptake period is complete and end in a timely manner. The correct computer acquisition parameters (including appropriate 2D versus 3D protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols using an approved head immobilization device. When CT scanning is applied, the student shall only scan the appropriate SFOV using the minimum kV and mAs values required to achieve a scan of diagnostic value. Upon release, the student shall advise the patient to drink plenty of fluids and void frequently to reduce radiation exposure.

The student shall have knowledge of positron annihilation physics as well as concept of transmission scanning. Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall be aware of the general characteristics that differentiate normal from abnormal biodistribution including recognition of typical uptake patterns for stroke, Alzheimer's disease, multifocal dementia, etc.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Every effort shall be made to ensure patient comfort and safety. Appropriate communications shall be maintained with the patient throughout the exam. The student technologist shall review patient expectations and anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

### Reference:

<http://interactive.snm.org/docs/Society%20of%20Nuclear%20Medicine%20Procedure%20Guideline%20for%20FDG%20PET%20Brain%20Imaging.pdf>

# 18F-Sodium Fluoride Skeletal PET Scan\*

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. Imaging shall begin and end in a timely manner. The correct computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. The student shall have knowledge of positron annihilation physics as well as the concept of transmission scanning (when performed).

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall be aware of the general characteristics that differentiate normal from abnormal biodistribution and uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Every effort shall be made to ensure patient comfort and safety. Appropriate communications shall be maintained with the patient throughout the exam. The student technologist shall review patient expectations and anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** <http://jnm.snmjournals.org/cgi/content/full/49/1/68>

# Hemangioma Scan\*

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. If a RBC-tag is required (separate competency), the student shall assure that a blood sample is withdrawn and administered in a sterile manner. All storage and reaction vials shall be appropriately labeled. Imaging shall begin and end in a timely manner. The correct computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. All attenuating or restrictive objects shall be removed for the scan. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. The student shall have a general knowledge of the factors differentiating a normal from an abnormal scan. Should dual imaging with a separate radiopharmaceutical be required, the student shall perform additional imaging until the final clinical result is achieved.

Processing shall include necessary filtering, image contrast adjustment and labeling. ROIs shall be drawn (if required), to obtain time-activity curves to measure accumulation and clearance of activity. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall have a working knowledge of the characteristics that distinguish normal versus abnormal biodistribution/uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Appropriate communications shall be maintained with the patient throughout the exam. Every effort shall be made to ensure patient comfort and safety. The student technologist shall review patient expectations and provide an anticipated time for imaging. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:**

[http://www.acr.org/SecondaryMainMenuCategories/quality\\_safety/guidelines/nuc\\_med/liver\\_spleen\\_scintigraphy.aspx](http://www.acr.org/SecondaryMainMenuCategories/quality_safety/guidelines/nuc_med/liver_spleen_scintigraphy.aspx)

# Salivary Gland Imaging Study\*

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. Imaging shall begin and end in a timely manner. The correct computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. All attenuating or restrictive objects shall be removed for the scan. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. The student shall have a general knowledge of the factors differentiating a normal from an abnormal scan. A glandular stimulus shall be administered orally if indicated.

Processing shall include necessary filtering, image contrast adjustment and labeling. ROIs shall be drawn (if required), to obtain time-activity curves to measure accumulation and clearance of activity. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall have a working knowledge of the characteristics that distinguish normal versus abnormal biodistribution/uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Appropriate communications shall be maintained with the patient throughout the exam. Every effort shall be made to ensure patient comfort and safety. The student technologist shall review patient expectations and provide an anticipated time for imaging. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** <http://www.ajronline.org/cgi/reprint/102/1/109>

# Radionuclide Cystography (Vesicoureteral Reflux)\*

The student technologist shall greet and identify the patient/parents in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. Sterile urethral catheterization should be performed when indicated. Imaging shall begin and end in a timely manner. The correct computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The examination table is covered with plastic-lined absorbent paper to contain radiopharmaceutical/urine spills. The patient shall be positioned according to department protocols with essential structures framed within the field of view. All attenuating or restrictive objects shall be removed for the scan. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. The student shall have detailed knowledge of the procedure being performed (Direct vs. Indirect cystography) including indications, patient prep, precautions/contraindications, radiopharmaceutical dose (and dilution factor if required), route of administration, acquisition parameters for the filling phase, void phase and post-void images, and interventions/non-radioactive pharmaceuticals (if required).

Processing shall include necessary filtering, image contrast adjustment and labeling. ROIs shall be drawn (if required), to obtain time-activity curves to measure accumulation and clearance of activity. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations (quantification of bladder volume and post-void RV) and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall have a working knowledge of the characteristics that distinguish normal versus abnormal biodistribution/uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Appropriate communications shall be maintained with the patient/parents throughout the exam. Every effort shall be made to ensure patient comfort and safety. The student technologist shall review patient/parent expectations and provide an anticipated time for imaging. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

**Reference:** [http://interactive.snm.org/docs/pg\\_ch32\\_0703.pdf](http://interactive.snm.org/docs/pg_ch32_0703.pdf)

# Bone Marrow Scan\*

The student technologist shall greet and identify the patient/parents in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. Imaging shall begin and end in a timely manner. The correct computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. All attenuating or restrictive objects shall be removed for the scan. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. The student shall have detailed knowledge of the procedure being performed including indications, patient prep, precautions/contraindications, radiopharmaceutical dose, route of administration, acquisition parameters, and interventions/non-radioactive pharmaceuticals (if required).

Processing shall include necessary filtering, image contrast adjustment and labeling. ROIs shall be drawn (if required), to obtain time-activity curves to measure accumulation and clearance of activity. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall be able to recognize abnormal bone marrow distribution patterns. Dual isotope imaging shall be performed when indicated.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Appropriate communications shall be maintained with the patient/parents throughout the exam. Every effort shall be made to ensure patient comfort and safety. The student technologist shall review patient/parent expectations and provide an anticipated time for imaging. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**References:**

<http://jnm.snmjournals.org/cgi/reprint/20/5/379>  
<http://jnm.snmjournals.org/cgi/reprint/39/2/346>

# Meckel's Diverticulum Study\*

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. Imaging shall begin and end in a timely manner. The correct computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. All attenuating or restrictive objects shall be removed for the scan. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. The student shall have detailed knowledge of the procedure being performed including indications, patient prep, precautions/contraindications, radiopharmaceutical dose, route of administration, acquisition parameters, and interventions/non-radioactive pharmaceuticals (if required).

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall have a working knowledge of the characteristics that distinguish normal versus abnormal biodistribution/uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Appropriate communications shall be maintained with the patient throughout the exam. Every effort shall be made to ensure patient comfort and safety. The student technologist shall review patient/parent expectations and provide an anticipated time for imaging. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** [http://interactive.snm.org/docs/pg\\_ch09\\_0403.pdf](http://interactive.snm.org/docs/pg_ch09_0403.pdf)

## Lymphoscintigraphy (Sentinel Node Imaging)

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. The student shall ensure that all supplies are available prior to administration including skin prep antiseptics, radiation waste containers, chucks and drapes, etc. The correct computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. All attenuating or restrictive objects shall be removed for the scan. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. The student shall have a general knowledge of the factors differentiating a normal from an abnormal scan and the general principles governing sentinel node imaging. The physician administering the dose(s) shall be assisted by the student technologist as needed.

Processing shall include necessary filtering, image contrast adjustment and labeling. ROIs shall be drawn (if required), to obtain time-activity curves to measure accumulation and clearance of activity. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall have a working knowledge of lymphatic drainage and be able to describe the merit of isolation and subsequent microscopic analysis of a sentinel node.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Appropriate communications shall be maintained with the patient throughout the exam. Every effort shall be made to ensure patient comfort and safety. The student technologist shall review patient expectations and provide an anticipated time for imaging. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** [http://interactive.snm.org/docs/pg\\_ch24\\_0403.pdf](http://interactive.snm.org/docs/pg_ch24_0403.pdf)



# Varicocele (Scrotal) Scan\*

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. Imaging shall begin and end in a timely manner. The correct computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. All attenuating or restrictive objects shall be removed for the scan. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. The student shall have detailed knowledge of the procedure being performed including indications, patient prep, precautions/contraindications, radiopharmaceutical dose, route of administration, acquisition parameters, and interventions/non-radioactive pharmaceuticals (if required).

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall have a working knowledge of the characteristics that distinguish normal versus abnormal biodistribution/uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Appropriate communications shall be maintained with the patient throughout the exam. Every effort shall be made to ensure patient comfort and safety. The student technologist shall review patient/parent expectations and provide an anticipated time for imaging. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:**

[www.acr.org/SecondaryMainMenuCategories/quality\\_safety/guidelines/nuc\\_med/scrotal\\_scintigraphy.aspx](http://www.acr.org/SecondaryMainMenuCategories/quality_safety/guidelines/nuc_med/scrotal_scintigraphy.aspx)

## PET Receptor Scan (e.g. Ga68-Dotatate & Cu64 Sartate)\*

PET Receptor imaging competencies include all diagnostic studies involving the use of a neuropeptide/hormone or any other peptide derivative linked to a radioactive tracer. These include (but are not limited to): Ga-68 Dotatate, DOTA-octreotate, Ga-68 Dotatoc, Cu-64 Dotatate (Detectnet) and Cu-64 Sartate.

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. Imaging shall begin and end in a timely manner. The correct 2D/3D scan mode and computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. Routine views shall include PET and CT images using appropriate projection(s) for the indicated time/counts. Markers or transmission images shall be used when indicated.

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall have a working knowledge of the characteristics that distinguish normal versus abnormal biodistribution/uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Every effort shall be made to ensure patient comfort and safety. Appropriate communications shall be maintained with the patient throughout the exam. The student technologist shall review patient expectations and anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:** Octreotide): <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4138137>

# PET Prostate Scan (e.g. 18F-Axumin, Ga68-PSMA) \*

PET 18F-Fluciclovine imaging competencies include all diagnostic studies involving the use of an amino acid derivative targeting amino acid transporters in patients with recurrent prostate cancer metastases. Additional uses include the investigation of brain metastases or primary brain tumors. Ga68 PMSA targets prostate specific membrane antigen (PSMA) positive lesions in men with prostate cancer

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. Imaging shall begin and end in a timely manner. The correct 2D/3D scan mode and computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. Routine views shall include PET and CT images using appropriate projection(s) for the indicated time/counts. Markers or transmission images shall be used when indicated.

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall have a working knowledge of the characteristics that distinguish normal versus abnormal biodistribution/uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Every effort shall be made to ensure patient comfort and safety. Appropriate communications shall be maintained with the patient throughout the exam. The student technologist shall review patient expectations and anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

Reference: <https://www.ncbi.nlm.nih.gov/pubmed/29523631>

# Amyloid Heart Scan (MIBG, PYP, etc)\*

Cardiac Amyloid Imaging competencies include all diagnostic studies involving the use of radiopharmaceuticals to diagnose cardiac amyloidosis, distinguish various forms of cardiac amyloid and follow disease burden. The student should be aware of the distinguishing uptake pattern for AL vs ATTR amyloidosis. When ROIs are required, the student should know where to place them and how they are interpreted in both a positive and negative amyloid heart scan.

The student technologist shall greet and identify the patient in a courteous fashion. Prior to imaging, the student shall ensure that the patient has complied with all preparatory requirements. Imaging shall begin and end in a timely manner. The correct computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The patient shall be positioned according to department protocols with essential structures framed within the field of view. All attenuating or restrictive objects shall be removed for the scan. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. The student shall have detailed knowledge of the procedure being performed including indications, patient prep, precautions/contraindications, radiopharmaceutical dose, route of administration, acquisition parameters, and interventions/non-radioactive pharmaceuticals (if required).

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall have a working knowledge of the characteristics that distinguish normal versus abnormal biodistribution/uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Appropriate communications shall be maintained with the patient throughout the exam. Every effort shall be made to ensure patient comfort and safety. The student technologist shall review patient/parent expectations and provide an anticipated time for imaging. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

Reference: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4302756/>

# Gamma Camera Uniformity Test (Floods)

The student technologist shall prepare a flood tank, point source or flood sheet source as required by department protocol. The flood source shall be placed an appropriate distance from the camera face. The technologist should state whether the uniformity test is to be performed intrinsically or extrinsically.

The correct computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The uniformity test shall be performed for the required time/counts. Processing shall include necessary filtering, image contrast adjustment and labeling.

The student technologist should be able to identify non-uniformities and be able to identify potential causes. Furthermore, the student technologist should be able to differentiate between differential and integral counting statistics. The results should be photographed or recorded as required by department protocol.

Finally, the student technologist shall be aware of how often uniformity tests are to be performed and at what time of day. Should a uniformity test present with sub-optimal results, the student technologist shall be knowledgeable of potential corrective actions.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:**

<http://www.auntminnie.com/index.asp?sec=ref&sub=ncm&pag=gen&itemid=54896>

# Gamma Camera Spatial Resolution (Bars)

The student technologist shall prepare a flood tank, point source or flood sheet source as required by department protocol. The flood source shall be situated an appropriate distance from the camera face with the bar phantom in place. The technologist should state whether the test is to be performed intrinsically or extrinsically.

The correct computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The spatial resolution test shall be performed for the required time/counts. The bar phantom/orientation shall be changed as needed to image each quadrant in the field of view. Processing shall include necessary filtering, image contrast adjustment and labeling.

The student technologist should be able to identify non-uniformities and be able to identify potential causes. Furthermore, the student technologist should be able to provide the relative measure of full-width-half-maximum based on the spacing of attenuating bars. The results should be photographed or recorded as required by department protocol.

Finally, the student technologist shall be aware of how often spatial resolution tests are to be performed and at what time of day. Should a test present with sub-optimal results, the student technologist shall be knowledgeable of potential corrective actions.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:**

<http://www.auntminnie.com/index.asp?sec=ref&sub=ncm&pag=gen&itemid=54896>

# PET/CT Quality Control

The student must be able to perform quality assurance procedures for PET and for CT components of hybrid scanners by established protocols in accordance with the predetermined schedules. Minimally this competency should include completion of daily blank scans and CT calibration (fast cals). This competency also includes performance of spatial resolution/linearity, contrast resolution, and CT number accuracy/standard deviation using the appropriate imaging phantom. The student must take care to fill and position the phantom according to protocol and image using proper technique.

Furthermore, the student technologist should be able to identify non-uniformities/nonlinearities and be able to identify potential causes for these artifacts. The student technologist should be able to state the acceptable study limits. Should the QC test present with sub-optimal results, the student technologist shall be knowledgeable of potential corrective actions.

Finally, the student technologist should be familiar with the purpose and protocol for a normalization scan including the frequency and/or conditions for which this study must be performed.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:**

[www.aapm.org/meetings/08SS/documents/Dahlbom.pdf](http://www.aapm.org/meetings/08SS/documents/Dahlbom.pdf)

# Gamma Camera Center of Rotation Study

The student technologist shall prepare a COR/phantom source as required by department protocol. The source shall contain the required amount of activity and be positioned appropriately using manufacturer-specific alignment procedures.

The correct computer acquisition parameters (including appropriate photopeak/protocol selection) shall be programmed in advance. The COR test shall be performed for the required time or counts per stop.

The student technologist should be able to identify potential causes for misalignment. Furthermore, the student technologist shall be aware of how often COR tests are to be performed and the potential effect a misalignment might cause in a SPECT study.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:**

<http://www.auntminnie.com/index.asp?sec=ref&sub=ncm&pag=gen&itemid=54896>



# Dose Calibrator Accuracy Test

The student technologist shall have knowledge of the procedure used to assess the accuracy of a dose calibrator. At least two sources with different principle photon energies should be used. One source must have a principle photon energy between 100 keV and 500 keV (within the range of activities normally assayed in the nuclear medicine department).

Background must be subtracted from all measurements. The assay should be repeated a total of three times to determine an average count. The student shall have knowledge of the frequency with which such tests are performed. The student must also be able to accurately state the limit after which inaccuracy shall result in repair or replacement of the dose calibrator.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:**

<http://www.auntminnie.com/index.asp?sec=ref&sub=ncm&pag=gen&itemid=54896>  
[http://www.meddean.luc.edu/LUMEN/MedEd/Radio/Nuc\\_med/radpharm/sect-f2e.htm](http://www.meddean.luc.edu/LUMEN/MedEd/Radio/Nuc_med/radpharm/sect-f2e.htm)

# Dose Calibrator Constancy Test

The student technologist shall have knowledge of the procedure used to assess the constancy of a dose calibrator. The student should be aware of the advantage for the use of a long-lived source in the determination of constancy. Background must be subtracted from all measurements. Values shall be recorded in the appropriate logbook and compared with recent values to determine if the instrument is maintaining constancy on a day-to-day basis.

The student shall have knowledge of the frequency with which such tests are performed. The student must also be able to accurately state the limit for each constancy measurement.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:**

<http://www.auntminnie.com/index.asp?sec=ref&sub=ncm&pag=gen&itemid=54896>  
[http://www.meddean.luc.edu/LUMEN/MedEd/Radio/Nuc\\_med/radpharm/sect-f2e.htm](http://www.meddean.luc.edu/LUMEN/MedEd/Radio/Nuc_med/radpharm/sect-f2e.htm)

# Dose Calibrator Linearity Test

The student shall perform a linearity test throughout the useful activity range for the department (varying from the  $\mu\text{Ci}$  range through the  $\text{mCi}$  range). Linearity may be assessed using calicheck attenuation shields or via decay over predetermined time intervals. Expected and actual measurements shall be compared graphically.

The student shall have knowledge of the frequency with which such tests are performed. The student must also be able to accurately state the limit for non-linearity.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

**Reference:**

<http://www.auntminnie.com/index.asp?sec=ref&sub=ncm&pag=gen&itemid=54896>  
[http://www.meddean.luc.edu/LUMEN/MedEd/Radio/Nuc\\_med/radpharm/sect-f2e.htm](http://www.meddean.luc.edu/LUMEN/MedEd/Radio/Nuc_med/radpharm/sect-f2e.htm)

# Dose Calibrator Geometry Test\*

The student shall perform a dose calibrator geometry test to show that correct readings can be obtained regardless of the sample size. Data shall be evaluated to determine the effect of sample geometry on the dose calibrator reading. Expected and actual measurements shall be compared graphically, as indicated.

The student shall have knowledge of the frequency with which such tests are performed.

Student's Name: \_\_\_\_\_ Site: \_\_\_\_\_ Quarter: \_\_\_\_\_ Date: \_\_\_\_\_

Supervising Technologist's Signature: \_\_\_\_\_

Comments:

---

---

---

---

---

**Reference:**

<http://www.auntminnie.com/index.asp?sec=ref&sub=ncm&pag=gen&itemid=54896>

<http://jnm.snmjournals.org/cgi/reprint/28/9/1478>

[http://www.meddean.luc.edu/LUMEN/MedEd/Radio/Nuc\\_med/radpharm/sect-f2e.htm](http://www.meddean.luc.edu/LUMEN/MedEd/Radio/Nuc_med/radpharm/sect-f2e.htm)

# Competency Availability

	VAPA	Stanford	VASF	CCRMC	VA Sac	VA Mtz	VA Fresno	CRMC
IV Admin/Venipuncture	X	X	X	X	X	X	X	X
Department Surveys	X	X	X	X	X	X	X	X
Package Check-in/out	X	X	X	X	X	X	X	X
Collimator Change	X	X	X	X	X	X	X	X
Department Wipes	X	X	X	X	X	X	X	X
3 Phase Bone Scan		X	X	X	X	X	X	X
WB bone scan	X	X	X	X	X	X	X	X
Bone SPECT	X	X	X	X	X	X	X	X
Renogram (without drug)	X	X	X	X	X	X	X	X
Renal Cortical Imaging		X						
Renogram (Lasix)	X	X	X	X	X	X	X	X
Renogram (Capto-/Enalapril)	X	X	X	X	X	X		
Resting Cardiac Perfusion	X	X	X	X	X	X	X	X
Stress Cardiac Perfusion	X	X	X	X	X	X	X	X
Hepatobiliary (HIDA) Scan	X	X	X	X	X	X	X	X
Liver Spleen Scan	X	X	X	X	X	X	X	X
Thyroid Uptake	X	X	X	X	X	X	X	X
Thyroid Scan	X	X	X	X	X	X	X	X
WB Thyroid Scan	X	X	X	X	X	X	X	X
MUGA	X	X	X	X	X	X	X	X
First-Pass Cardiac Study	X	X	X	X	X	X	X	X
Parathyroid Scan	X	X	X	X	X	X	X	X
Ventilation (Vent) Lung Scan	X	X	X	X	X	X	X	X
Perfusion Lung Scan	X	X	X	X	X	X	X	X
R → L Lung Shunt	X	X	X	X	X	X	X	X
Ulratag Kit Preparation		X	X		X	X	X	X
GI Bleed Scan	X	X	X	X	X	X	X	X
Esophageal Reflux/Transit	X	X						
Gastric Emptying	X	X	X	X	X	X	X	X
Gallium Scan		X		X				
Leukocyte (WBC) Scan	X	X	X	X	X	X	X	X
Antibody/Receptor Imaging	X	X	X	X	X	X	X	X
H. Pylori Breath Test								
DEXA (Bone Densitometry)	X				X		X	
RBC Mass/Survival Study	X	X						
Splenic Sequestration Study		X						
Brain Death Scan		X			X			
SPECT Brain Imaging		X		X				X
Cisternogram	X	X	X	X	X	X	X	X
PET/CT Scan (Whole Body)	X	X			X			
PET/CT with iodinated contrast		X			X			
PET Scan (Heart)	X	X						
PET Scan (Brain)	X	X			X			
18F-Fluoride PET Bone	X							
Hemangioma Scan	X	X	X	X	X	X	X	X
Salivary Gland Imaging	X	X	X	X	X	X	X	X
Reflux Study	X	X	X		X			
Bone Marrow Scan		X	X		X			
Meckel's Diverticulum	X	X	X		X			
Lymphoscintigraphy	X	X	X		X			
Varicocele Scan	X	X	X		X			
PET Receptor Scan (Dotatate)	X	X	X		X			
PET Prostate Scan (PSMA)	X	X	X		X			
Amyloid Heart Scan	X	X	X		X			
Uniformity/Floods	X	X	X	X	X	X	X	X
Gamma Camera Linearity/Bars	X	X	X	X	X	X	X	X
PET/CT QC	X	X	X	X	X	X	X	X
SPECT COR	X	X	X	X	X	X	X	X
Dose Calibrator Accuracy	X	X	X	X	X	X	X	X
Dose Calibrator Constancy	X	X	X	X	X	X	X	X
Dose Calibrator Linearity	X	X	X	X	X	X	X	X
Dose Calibrator Geometry	X	X	X	X	X	X	X	X

# Competencies not requiring signatures (Treadmill)

Name: \_\_\_\_\_ Clinic: \_\_\_\_\_

## Skills Checklist

- 1) Assess patient's suitability for the treadmill
- 2) Review consult and order medications as appropriate
- 3) Determine patient's ability to exercise (e.g. low level, high level exercise protocols)
- 4) If pharmacological stress, which drug (dobutamine/adenosine/persantine)?
- 5) Discuss pharmacologic drugs including the mechanisms, indications, contraindications & antidotes
- 6) If pharmacologic stress, screen for contraindications (e.g. Caffeine, Beta-blockers, etc)
- 7) Be familiar with the operation of an infusion pump
- 8) Enter patient information into the computer
- 9) Make sure EKG paper is in supply/loaded
- 10) Set up IV bag with tubing and evacuate air.
- 11) Prepare the skin for EKG placement
- 12) Properly place electrodes for a 12-lead electrocardiogram
- 13) Determine baseline heart rate, blood pressure and other vitals (if needed) in both the standing and sitting positions.
- 14) Determine the Maximum Heart Rate/Time of exercise.
- 15) Be familiar with the appearance of a normal sinus rhythm
- 16) Identify at least 3 EKG arrhythmias as they present:  Bradycardia,  
 Tachycardia,  R/L Bundle Branch Block,  QRS widening,  Q wave  
(infarction),  ST elevation,  ST depression,  Ventricular tachycardia
- 17) For treadmill patients, gauge level of fatigue to determine end-point of the exam.
- 18) Monitor patient recovery through assessment of vitals.
- 19) Clean and prepare treadmill suite for subsequent patient
- 20) Ensure continuity of patient flow
- 21) Abide by National Patient Safety Goals (e.g. Proper patient ID, handwashing before and after touching patient, practicing standard precautions, etc)

## Daily Objectives

Day 1: Correctly prepare the patient/EKG/IV for the treadmill test. Assist in the determination of treadmill vs. pharmacological stress test.

Day 2: Correctly select appropriate protocols and assist patient procedure. Attempt to recognize arrhythmias or other abnormalities.

Day 3: Be familiar with each stage of the treadmill process and actively participate to the extent allowed by the facility physician/nurse.

Day 4: Be familiar with each stage of the treadmill process and actively participate to the extent allowed by the facility physician/nurse.

Day 5: Be familiar with each stage of the treadmill process and actively participate to the extent allowed by the facility physician/nurse.

## Reference:

Preparation can be found at: <http://www.arna.net>

# Competencies not requiring signatures (Blood Draws, etc)

Name: \_\_\_\_\_

Observation of radiopharmacy technique, therapeutic administration (Including I-131 therapy, Sm-153, Sr-89, Bexxar, Zevalin, Y-90 SIRT spheres, etc) and physician readouts are required prior to the conclusion of the school year. These studies are to be performed in addition to the 40 mandatory comps.

Radiopharmacy Site #1: \_\_\_\_\_ Dates \_\_\_\_\_

Radiopharmacy Site #2: \_\_\_\_\_ Dates \_\_\_\_\_

Readout #1 Site \_\_\_\_\_ Reading Physician \_\_\_\_\_ Date \_\_\_\_\_

Readout #2 Site \_\_\_\_\_ Reading Physician \_\_\_\_\_ Date \_\_\_\_\_

At least 10 blood withdrawals for *in Vitro* labeling or analysis must be performed by the student. These competencies do not require a signature but do require appropriate supervision by a licensed technologist.

1) Blood Withdrawal Clinic: \_\_\_\_\_ Date \_\_\_\_\_ Study \_\_\_\_\_

2) Blood Withdrawal Clinic: \_\_\_\_\_ Date \_\_\_\_\_ Study \_\_\_\_\_

3) Blood Withdrawal Clinic: \_\_\_\_\_ Date \_\_\_\_\_ Study \_\_\_\_\_

4) Blood Withdrawal Clinic: \_\_\_\_\_ Date \_\_\_\_\_ Study \_\_\_\_\_

5) Blood Withdrawal Clinic: \_\_\_\_\_ Date \_\_\_\_\_ Study \_\_\_\_\_

6) Blood Withdrawal Clinic: \_\_\_\_\_ Date \_\_\_\_\_ Study \_\_\_\_\_

7) Blood Withdrawal Clinic: \_\_\_\_\_ Date \_\_\_\_\_ Study \_\_\_\_\_

8) Blood Withdrawal Clinic: \_\_\_\_\_ Date \_\_\_\_\_ Study \_\_\_\_\_

9) Blood Withdrawal Clinic: \_\_\_\_\_ Date \_\_\_\_\_ Study \_\_\_\_\_

10) Blood Withdrawal Clinic: \_\_\_\_\_ Date \_\_\_\_\_ Study \_\_\_\_\_

## Competencies not requiring signatures (I-131 Therapies)

Observations of 10 therapeutic administrations (at least 5 oral) must be documented prior to graduation.

1) I-131 Oral Administration                      Date: \_\_\_\_\_ Site: \_\_\_\_\_  
Indications: Hyperthyroidism / Thyroid Ablation / Other      Dietary Restrictions? ( Y / N )  
Uptake: \_\_\_\_\_%      Thyroid Size: \_\_\_\_\_ grams              Type of Dosing ( Fixed / Adjustable )  
Total Dose Administered: \_\_\_\_\_ mCi. What was the 1-meter reading? = \_\_\_\_\_ mrem  
Criteria used for release? ( < 33 mCi / < 7 mrem/hr at 1 m / < 0.5 rem dose to the public )  
Est. dose to public ([www.uams.edu/campusop/depts/ohs/forms/radcalcs.aspx](http://www.uams.edu/campusop/depts/ohs/forms/radcalcs.aspx)) = \_\_\_\_\_ mrem  
Was the patient counseled? ( Y / N ) What is the Occupancy Factor? ( 0.75 / 0.25 / 0.125 )  
Was the patient screened for nursing/pregnancy? ( Y / N )  
Did the dose administered differ from the prescribed dose by more than 20%? ( Y / N )

2) I-131 Oral Administration                      Date: \_\_\_\_\_ Site: \_\_\_\_\_  
Indications: Hyperthyroidism / Thyroid Ablation / Other      Dietary Restrictions? ( Y / N )  
Uptake: \_\_\_\_\_%      Thyroid Size: \_\_\_\_\_ grams              Type of Dosing ( Fixed / Adjustable )  
Total Dose Administered: \_\_\_\_\_ mCi. What was the 1-meter reading? = \_\_\_\_\_ mrem  
Criteria used for release? ( < 33 mCi / < 7 mrem/hr at 1 m / < 0.5 rem dose to the public )  
Est. dose to public ([www.uams.edu/campusop/depts/ohs/forms/radcalcs.aspx](http://www.uams.edu/campusop/depts/ohs/forms/radcalcs.aspx)) = \_\_\_\_\_ mrem  
Was the patient counseled? ( Y / N ) What is the Occupancy Factor? ( 0.75 / 0.25 / 0.125 )  
Was the patient screened for nursing/pregnancy? ( Y / N )  
Did the dose administered differ from the prescribed dose by more than 20%? ( Y / N )

3) I-131 Oral Administration                      Date: \_\_\_\_\_ Site: \_\_\_\_\_  
Indications: Hyperthyroidism / Thyroid Ablation / Other      Dietary Restrictions? ( Y / N )  
Uptake: \_\_\_\_\_%      Thyroid Size: \_\_\_\_\_ grams              Type of Dosing ( Fixed / Adjustable )  
Total Dose Administered: \_\_\_\_\_ mCi. What was the 1-meter reading? = \_\_\_\_\_ mrem  
Criteria used for release? ( < 33 mCi / < 7 mrem/hr at 1 m / < 0.5 rem dose to the public )  
Est. dose to public ([www.uams.edu/campusop/depts/ohs/forms/radcalcs.aspx](http://www.uams.edu/campusop/depts/ohs/forms/radcalcs.aspx)) = \_\_\_\_\_ mrem  
Was the patient counseled? ( Y / N ) What is the Occupancy Factor? ( 0.75 / 0.25 / 0.125 )  
Was the patient screened for nursing/pregnancy? ( Y / N )  
Did the dose administered differ from the prescribed dose by more than 20%? ( Y / N )



Name: \_\_\_\_\_

4) I-131 Oral Administration                      Date: \_\_\_\_\_ Site: \_\_\_\_\_  
Indications: Hyperthyroidism / Thyroid Ablation / Other      Dietary Restrictions? ( Y / N )  
Uptake: \_\_\_\_\_%      Thyroid Size: \_\_\_\_\_ grams              Type of Dosing ( Fixed / Adjustable )  
Total Dose Administered: \_\_\_\_\_ mCi. What was the 1-meter reading? = \_\_\_\_\_ mrem  
Criteria used for release? ( < 33 mCi / < 7 mrem/hr at 1 m / < 0.5 rem dose to the public )  
Est. dose to public (www.uams.edu/campusop/depts/ohs/forms/radcalcs.aspx) = \_\_\_\_\_ mrem  
Was the patient counseled? ( Y / N ) What is the Occupancy Factor? ( 0.75 / 0.25 / 0.125 )  
Was the patient screened for nursing/pregnancy? ( Y / N )  
Did the dose administered differ from the prescribed dose by more than 20%? ( Y / N )

5) I-131 Oral Administration                      Date: \_\_\_\_\_ Site: \_\_\_\_\_  
Indications: Hyperthyroidism / Thyroid Ablation / Other      Dietary Restrictions? ( Y / N )  
Uptake: \_\_\_\_\_%      Thyroid Size: \_\_\_\_\_ grams              Type of Dosing ( Fixed / Adjustable )  
Total Dose Administered: \_\_\_\_\_ mCi. What was the 1-meter reading? = \_\_\_\_\_ mrem  
Criteria used for release? ( < 33 mCi / < 7 mrem/hr at 1 m / < 0.5 rem dose to the public )  
Est. dose to public (www.uams.edu/campusop/depts/ohs/forms/radcalcs.aspx) = \_\_\_\_\_ mrem  
Was the patient counseled? ( Y / N ) What is the Occupancy Factor? ( 0.75 / 0.25 / 0.125 )  
Was the patient screened for nursing/pregnancy? ( Y / N )  
Did the dose administered differ from the prescribed dose by more than 20%? ( Y / N )

6) I-131 Oral Administration                      Date: \_\_\_\_\_ Site: \_\_\_\_\_  
Indications: Hyperthyroidism / Thyroid Ablation / Other      Dietary Restrictions? ( Y / N )  
Uptake: \_\_\_\_\_%      Thyroid Size: \_\_\_\_\_ grams              Type of Dosing ( Fixed / Adjustable )  
Total Dose Administered: \_\_\_\_\_ mCi. What was the 1-meter reading? = \_\_\_\_\_ mrem  
Criteria used for release? ( < 33 mCi / < 7 mrem/hr at 1 m / < 0.5 rem dose to the public )  
Est. dose to public (www.uams.edu/campusop/depts/ohs/forms/radcalcs.aspx) = \_\_\_\_\_ mrem  
Was the patient counseled? ( Y / N ) What is the Occupancy Factor? ( 0.75 / 0.25 / 0.125 )  
Was the patient screened for nursing/pregnancy? ( Y / N )  
Did the dose administered differ from the prescribed dose by more than 20%? ( Y / N )

Name: \_\_\_\_\_

7) I-131 Oral Administration                      Date: \_\_\_\_\_ Site: \_\_\_\_\_  
Indications: Hyperthyroidism / Thyroid Ablation / Other      Dietary Restrictions? ( Y / N )  
Uptake: \_\_\_\_\_%      Thyroid Size: \_\_\_\_\_ grams              Type of Dosing ( Fixed / Adjustable )  
Total Dose Administered: \_\_\_\_\_ mCi. What was the 1-meter reading? = \_\_\_\_\_ mrem  
Criteria used for release? ( < 33 mCi / < 7 mrem/hr at 1 m / < 0.5 rem dose to the public )  
Est. dose to public (www.uams.edu/campusop/depts/ohs/forms/radcalcs.aspx) = \_\_\_\_\_ mrem  
Was the patient counseled? ( Y / N ) What is the Occupancy Factor? ( 0.75 / 0.25 / 0.125 )  
Was the patient screened for nursing/pregnancy? ( Y / N )  
Did the dose administered differ from the prescribed dose by more than 20%? ( Y / N )

8) I-131 Oral Administration                      Date: \_\_\_\_\_ Site: \_\_\_\_\_  
Indications: Hyperthyroidism / Thyroid Ablation / Other      Dietary Restrictions? ( Y / N )  
Uptake: \_\_\_\_\_%      Thyroid Size: \_\_\_\_\_ grams              Type of Dosing ( Fixed / Adjustable )  
Total Dose Administered: \_\_\_\_\_ mCi. What was the 1-meter reading? = \_\_\_\_\_ mrem  
Criteria used for release? ( < 33 mCi / < 7 mrem/hr at 1 m / < 0.5 rem dose to the public )  
Est. dose to public (www.uams.edu/campusop/depts/ohs/forms/radcalcs.aspx) = \_\_\_\_\_ mrem  
Was the patient counseled? ( Y / N ) What is the Occupancy Factor? ( 0.75 / 0.25 / 0.125 )  
Was the patient screened for nursing/pregnancy? ( Y / N )  
Did the dose administered differ from the prescribed dose by more than 20%? ( Y / N )

9) I-131 Oral Administration                      Date: \_\_\_\_\_ Site: \_\_\_\_\_  
Indications: Hyperthyroidism / Thyroid Ablation / Other      Dietary Restrictions? ( Y / N )  
Uptake: \_\_\_\_\_%      Thyroid Size: \_\_\_\_\_ grams              Type of Dosing ( Fixed / Adjustable )  
Total Dose Administered: \_\_\_\_\_ mCi. What was the 1-meter reading? = \_\_\_\_\_ mrem  
Criteria used for release? ( < 33 mCi / < 7 mrem/hr at 1 m / < 0.5 rem dose to the public )  
Est. dose to public (www.uams.edu/campusop/depts/ohs/forms/radcalcs.aspx) = \_\_\_\_\_ mrem  
Was the patient counseled? ( Y / N ) What is the Occupancy Factor? ( 0.75 / 0.25 / 0.125 )  
Was the patient screened for nursing/pregnancy? ( Y / N )  
Did the dose administered differ from the prescribed dose by more than 20%? ( Y / N )

Name: \_\_\_\_\_

10) I-131 Oral Administration      Date: \_\_\_\_\_ Site: \_\_\_\_\_  
Indications: Hyperthyroidism / Thyroid Ablation / Other      Dietary Restrictions? ( Y / N )  
Uptake: \_\_\_\_\_%      Thyroid Size: \_\_\_\_\_ grams      Type of Dosing ( Fixed / Adjustable )  
Total Dose Administered: \_\_\_\_\_ mCi. What was the 1-meter reading? = \_\_\_\_\_ mrem  
Criteria used for release? ( < 33 mCi / < 7 mrem/hr at 1 m / < 0.5 rem dose to the public )  
Est. dose to public (www.uams.edu/campusop/depts/ohs/forms/radcalcs.aspx) = \_\_\_\_\_ mrem  
Was the patient counseled? ( Y / N )      What is the Occupancy Factor? ( 0.75 / 0.25 / 0.125 )  
Was the patient screened for nursing/pregnancy? ( Y / N )  
Did the dose administered differ from the prescribed dose by more than 20%? ( Y / N )

## Competencies not requiring signatures (Other Therapy)

Observation of non-radioiodine therapies should be documented below.

Y-90 Zevalin      Site: \_\_\_\_\_ Date: \_\_\_\_\_

Radium-223      Site: \_\_\_\_\_ Date: \_\_\_\_\_

Strontium-89 Chloride (Metastron)      Site: \_\_\_\_\_ Date: \_\_\_\_\_

Rhenium-186 HEDP      Site: \_\_\_\_\_ Date: \_\_\_\_\_

Samarium-153 EDTMP      Site: \_\_\_\_\_ Date: \_\_\_\_\_

Y-90 SIR Sphere Therapy      Site: \_\_\_\_\_ Date: \_\_\_\_\_

Lu-177 Lutathera:      Site: \_\_\_\_\_ Date: \_\_\_\_\_

Other: \_\_\_\_\_ Site: \_\_\_\_\_ Date: \_\_\_\_\_

Other: \_\_\_\_\_ Site: \_\_\_\_\_ Date: \_\_\_\_\_

Other: \_\_\_\_\_ Site: \_\_\_\_\_ Date: \_\_\_\_\_

Other: \_\_\_\_\_ Site: \_\_\_\_\_ Date: \_\_\_\_\_

Other: \_\_\_\_\_ Site: \_\_\_\_\_ Date: \_\_\_\_\_

Other: \_\_\_\_\_ Site: \_\_\_\_\_ Date: \_\_\_\_\_

# VA End of Rotation Evaluation Q1.1

Student Name \_\_\_\_\_ Site: \_\_\_\_\_ Dates: 7/6 – 8/20/21

**Grade:** A = Outstanding Performance; B = Above average; C = Satisfactory; D = Needs Improvement; F = Unsatisfactory (May result in Clinical Probation or possible dismissal); N/A Not Applicable.

## Behavioral Objectives

- | <u>8/6/21</u> | <u>8/20/21</u> | ← The optional 1 <sup>st</sup> grade column is only for guidance. The 2 <sup>nd</sup> is the official grade. |
|---------------|----------------|--|
| _____         | _____          | Cooperation -ability to work harmoniously with coworkers at all levels                                       |
| _____         | _____          | Dependability -completes assigned work; follows task through to completion                                   |
| _____         | _____          | Adaptability -ability to modify procedure to a given situation   |
| _____         | _____          | Motivation -puts forth enthusiastic effort and displays a desire to learn                                    |
| _____         | _____          | Personal Appearance -follows dress code, neat in appearance, practices good hygiene                          |
| _____         | _____          | Punctuality -reports to department and is ready to begin work on time  |

## Administrative and Clerical Skills

- | <u>8/6/21</u> | <u>8/20/21</u> | ← The optional 1 <sup>st</sup> grade column is only for guidance. The 2 <sup>nd</sup> is the official grade. |
|---------------|----------------|--|
| _____         | _____          | Verifies requisition (correct study, patient, radiopharm on order w/ doctor's approval)                      |
| _____         | _____          | Screens patient history/labs for appropriateness including nursing/pregnancy screen                          |
| _____         | _____          | Adequately verifies patient identification using at least two forms of ID                                    |
| _____         | _____          | Retrieves previous films, studies or results as necessary  |
| _____         | _____          | Ensures hot-lab computer entries (e.g. dose logs) are complete and accurate                                  |
| _____         | _____          | Properly labels all images (e.g. Ant, Post) and documents necessary info in patient chart                    |

## Technical Skills

- | <u>8/6/21</u> | <u>8/20/21</u> | ← The optional 1 <sup>st</sup> grade column is only for guidance. The 2 <sup>nd</sup> is the official grade. |
|---------------|----------------|--|
| _____         | _____          | Demonstrates knowledge of technical procedures; uses procedure manual/notes                                  |
| _____         | _____          | Conforms with ALARA principle: wears film badges, gloves, uses shields, monitors time                        |
| _____         | _____          | Uses proper IV technique (avoids extravasations and injects in a timely manner)                              |
| _____         | _____          | Correctly performs detector quality assurance procedures   |
| _____         | _____          | Prepares imaging room for procedure: cleans equipment, changes linens  |
| _____         | _____          | Positions patient or detector in required positions for all procedures                                       |
| _____         | _____          | Correctly sets all computer acquisition parameters   |
| _____         | _____          | Correctly processes digital images   |
| _____         | _____          | Performs accurate calculations on non-imaging procedures   |
| _____         | _____          | Checks images/views with appropriate individual prior to releasing patient                                   |

## Patient Care

- | <u>8/6/21</u> | <u>8/20/21</u> | ← The optional 1 <sup>st</sup> grade column is only for guidance. The 2 <sup>nd</sup> is the official grade. |
|---------------|----------------|--|
| _____         | _____          | Is courteous and considerate to patient and puts patient at ease during exam                                 |
| _____         | _____          | Explains procedure to patient, welcomes and answers questions  |
| _____         | _____          | Ensures patient comfort and safety throughout exam   |
| _____         | _____          | Completes/verifies patient preparation procedures according to protocol                                      |

Comments:

Clinic Supervisor's Signature: \_\_\_\_\_ (only for 8/20/21)

# VA End of Rotation Evaluation Q1.2

Student Name \_\_\_\_\_ Site: \_\_\_\_\_ Dates: 8/23 – 10/1/21

**Grade:** A = Outstanding Performance; B = Above average; C = Satisfactory; D = Needs Improvement; F = Unsatisfactory (May result in Clinical Probation or possible dismissal); N/A Not Applicable.

## Behavioral Objectives

9/20/21 10/1/21 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ Cooperation -ability to work harmoniously with coworkers at all levels  
\_\_\_\_\_  
\_\_\_\_\_ Dependability -completes assigned work; follows task through to completion  
\_\_\_\_\_  
\_\_\_\_\_ Adaptability -ability to modify procedure to a given situation  
\_\_\_\_\_  
\_\_\_\_\_ Motivation -puts forth enthusiastic effort and displays a desire to learn  
\_\_\_\_\_  
\_\_\_\_\_ Personal Appearance -follows dress code, neat in appearance, practices good hygiene  
\_\_\_\_\_  
\_\_\_\_\_ Punctuality -reports to department and is ready to begin work on time

## Administrative and Clerical Skills

9/20/21 10/1/21 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ Verifies requisition (correct study, patient, radiopharm on order w/ doctor's approval)  
\_\_\_\_\_  
\_\_\_\_\_ Screens patient history/labs for appropriateness including nursing/pregnancy screen  
\_\_\_\_\_  
\_\_\_\_\_ Adequately verifies patient identification using at least two forms of ID  
\_\_\_\_\_  
\_\_\_\_\_ Retrieves previous films, studies or results as necessary  
\_\_\_\_\_  
\_\_\_\_\_ Ensures hot-lab computer entries (e.g. dose logs) are complete and accurate  
\_\_\_\_\_  
\_\_\_\_\_ Properly labels all images (e.g. Ant, Post) and documents necessary info in patient chart

## Technical Skills

9/20/21 10/1/21 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ Demonstrates knowledge of technical procedures; uses procedure manual/notes  
\_\_\_\_\_  
\_\_\_\_\_ Conforms with ALARA principle: wears film badges, gloves, uses shields, monitors time  
\_\_\_\_\_  
\_\_\_\_\_ Uses proper IV technique (avoids extravasations and injects in a timely manner)  
\_\_\_\_\_  
\_\_\_\_\_ Correctly performs detector quality assurance procedures  
\_\_\_\_\_  
\_\_\_\_\_ Prepares imaging room for procedure: cleans equipment, changes linens  
\_\_\_\_\_  
\_\_\_\_\_ Positions patient or detector in required positions for all procedures  
\_\_\_\_\_  
\_\_\_\_\_ Correctly sets all computer acquisition parameters  
\_\_\_\_\_  
\_\_\_\_\_ Correctly processes digital images  
\_\_\_\_\_  
\_\_\_\_\_ Performs accurate calculations on non-imaging procedures  
\_\_\_\_\_  
\_\_\_\_\_ Checks images/views with appropriate individual prior to releasing patient

## Patient Care

9/20/21 10/1/21 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ Is courteous and considerate to patient and puts patient at ease during exam  
\_\_\_\_\_  
\_\_\_\_\_ Explains procedure to patient, welcomes and answers questions  
\_\_\_\_\_  
\_\_\_\_\_ Ensures patient comfort and safety throughout exam  
\_\_\_\_\_  
\_\_\_\_\_ Completes/verifies patient preparation procedures according to protocol

Comments:

Clinic Supervisor's Signature: \_\_\_\_\_ (only for 10/1/21)

# VA End of Rotation Evaluation Q2.1

Student Name \_\_\_\_\_ Site: \_\_\_\_\_ Dates: 10/11-11/24/21

**Grade:** A = Outstanding Performance; B = Above average; C = Satisfactory; D = Needs Improvement; F = Unsatisfactory (May result in Clinical Probation or possible dismissal); N/A Not Applicable.

## Behavioral Objectives

11/6/21 11/19/21 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ Cooperation -ability to work harmoniously with coworkers at all levels  
\_\_\_\_\_  
\_\_\_\_\_ Dependability -completes assigned work; follows task through to completion  
\_\_\_\_\_  
\_\_\_\_\_ Adaptability -ability to modify procedure to a given situation  
\_\_\_\_\_  
\_\_\_\_\_ Motivation -puts forth enthusiastic effort and displays a desire to learn  
\_\_\_\_\_  
\_\_\_\_\_ Personal Appearance -follows dress code, neat in appearance, practices good hygiene  
\_\_\_\_\_  
\_\_\_\_\_ Punctuality -reports to department and is ready to begin work on time

## Administrative and Clerical Skills

11/6/21 11/19/21 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ Verifies requisition (correct study, patient, radiopharm on order w/ doctor's approval)  
\_\_\_\_\_  
\_\_\_\_\_ Screens patient history/labs for appropriateness including nursing/pregnancy screen  
\_\_\_\_\_  
\_\_\_\_\_ Adequately verifies patient identification using at least two forms of ID  
\_\_\_\_\_  
\_\_\_\_\_ Retrieves previous films, studies or results as necessary  
\_\_\_\_\_  
\_\_\_\_\_ Ensures hot-lab computer entries (e.g. dose logs) are complete and accurate  
\_\_\_\_\_  
\_\_\_\_\_ Properly labels all images (e.g. Ant, Post) and documents necessary info in patient chart

## Technical Skills

11/6/21 11/19/21 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ Demonstrates knowledge of technical procedures; uses procedure manual/notes  
\_\_\_\_\_  
\_\_\_\_\_ Conforms with ALARA principle: wears film badges, gloves, uses shields, monitors time  
\_\_\_\_\_  
\_\_\_\_\_ Uses proper IV technique (avoids extravasations and injects in a timely manner)  
\_\_\_\_\_  
\_\_\_\_\_ Correctly performs detector quality assurance procedures  
\_\_\_\_\_  
\_\_\_\_\_ Prepares imaging room for procedure: cleans equipment, changes linens  
\_\_\_\_\_  
\_\_\_\_\_ Positions patient or detector in required positions for all procedures  
\_\_\_\_\_  
\_\_\_\_\_ Correctly sets all computer acquisition parameters  
\_\_\_\_\_  
\_\_\_\_\_ Correctly processes digital images  
\_\_\_\_\_  
\_\_\_\_\_ Performs accurate calculations on non-imaging procedures  
\_\_\_\_\_  
\_\_\_\_\_ Checks images/views with appropriate individual prior to releasing patient

## Patient Care

11/6/21 11/19/21 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ Is courteous and considerate to patient and puts patient at ease during exam  
\_\_\_\_\_  
\_\_\_\_\_ Explains procedure to patient, welcomes and answers questions  
\_\_\_\_\_  
\_\_\_\_\_ Ensures patient comfort and safety throughout exam  
\_\_\_\_\_  
\_\_\_\_\_ Completes/verifies patient preparation procedures according to protocol

Comments:

Clinic Supervisor's Signature: \_\_\_\_\_ (only for 11/19/21)

# VA End of Rotation Evaluation Q2.2

Student Name \_\_\_\_\_ Site: \_\_\_\_\_ Dates: 11/29–12/23/21

**Grade:** A = Outstanding Performance; B = Above average; C = Satisfactory; D = Needs Improvement; F = Unsatisfactory (May result in Clinical Probation or possible dismissal); N/A Not Applicable.

## Behavioral Objectives

12/10/21 12/22/21 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.

- \_\_\_\_\_ \_\_\_\_\_ Cooperation -ability to work harmoniously with coworkers at all levels
- \_\_\_\_\_ \_\_\_\_\_ Dependability -completes assigned work; follows task through to completion
- \_\_\_\_\_ \_\_\_\_\_ Adaptability -ability to modify procedure to a given situation
- \_\_\_\_\_ \_\_\_\_\_ Motivation -puts forth enthusiastic effort and displays a desire to learn
- \_\_\_\_\_ \_\_\_\_\_ Personal Appearance -follows dress code, neat in appearance, practices good hygiene
- \_\_\_\_\_ \_\_\_\_\_ Punctuality -reports to department and is ready to begin work on time

## Administrative and Clerical Skills

12/10/21 12/22/21 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.

- \_\_\_\_\_ \_\_\_\_\_ Verifies requisition (correct study, patient, radiopharm on order w/ doctor's approval)
- \_\_\_\_\_ \_\_\_\_\_ Screens patient history/labs for appropriateness including nursing/pregnancy screen
- \_\_\_\_\_ \_\_\_\_\_ Adequately verifies patient identification using at least two forms of ID
- \_\_\_\_\_ \_\_\_\_\_ Retrieves previous films, studies or results as necessary
- \_\_\_\_\_ \_\_\_\_\_ Ensures hot-lab computer entries (e.g. dose logs) are complete and accurate
- \_\_\_\_\_ \_\_\_\_\_ Properly labels all images (e.g. Ant, Post) and documents necessary info in patient chart

## Technical Skills

12/10/21 12/22/21 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.

- \_\_\_\_\_ \_\_\_\_\_ Demonstrates knowledge of technical procedures; uses procedure manual/notes
- \_\_\_\_\_ \_\_\_\_\_ Conforms with ALARA principle: wears film badges, gloves, uses shields, monitors time
- \_\_\_\_\_ \_\_\_\_\_ Uses proper IV technique (avoids extravasations and injects in a timely manner)
- \_\_\_\_\_ \_\_\_\_\_ Correctly performs detector quality assurance procedures
- \_\_\_\_\_ \_\_\_\_\_ Prepares imaging room for procedure: cleans equipment, changes linens
- \_\_\_\_\_ \_\_\_\_\_ Positions patient or detector in required positions for all procedures
- \_\_\_\_\_ \_\_\_\_\_ Correctly sets all computer acquisition parameters
- \_\_\_\_\_ \_\_\_\_\_ Correctly processes digital images
- \_\_\_\_\_ \_\_\_\_\_ Performs accurate calculations on non-imaging procedures
- \_\_\_\_\_ \_\_\_\_\_ Checks images/views with appropriate individual prior to releasing patient

## Patient Care

12/10/21 12/22/21 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.

- \_\_\_\_\_ \_\_\_\_\_ Is courteous and considerate to patient and puts patient at ease during exam
- \_\_\_\_\_ \_\_\_\_\_ Explains procedure to patient, welcomes and answers questions
- \_\_\_\_\_ \_\_\_\_\_ Ensures patient comfort and safety throughout exam
- \_\_\_\_\_ \_\_\_\_\_ Completes/verifies patient preparation procedures according to protocol

Comments:

Clinic Supervisor's Signature: \_\_\_\_\_ (only for 12/22/21)

# VA End of Rotation Evaluation Q3.1

Student Name \_\_\_\_\_ Site: \_\_\_\_\_ Dates: 1/4- 2/11/22

**Grade:** A = Outstanding Performance; B = Above average; C = Satisfactory; D = Needs Improvement; F = Unsatisfactory (May result in Clinical Probation or possible dismissal); N/A Not Applicable.

## Behavioral Objectives

- 1/28/22 2/11/22 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.
- \_\_\_\_\_ \_\_\_\_\_ Cooperation -ability to work harmoniously with coworkers at all levels
  - \_\_\_\_\_ \_\_\_\_\_ Dependability -completes assigned work; follows task through to completion
  - \_\_\_\_\_ \_\_\_\_\_ Adaptability -ability to modify procedure to a given situation
  - \_\_\_\_\_ \_\_\_\_\_ Motivation -puts forth enthusiastic effort and displays a desire to learn
  - \_\_\_\_\_ \_\_\_\_\_ Personal Appearance -follows dress code, neat in appearance, practices good hygiene
  - \_\_\_\_\_ \_\_\_\_\_ Punctuality -reports to department and is ready to begin work on time

## Administrative and Clerical Skills

- 1/28/22 2/11/22 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.
- \_\_\_\_\_ \_\_\_\_\_ Verifies requisition (correct study, patient, radiopharm on order w/ doctor's approval)
  - \_\_\_\_\_ \_\_\_\_\_ Screens patient history/labs for appropriateness including nursing/pregnancy screen
  - \_\_\_\_\_ \_\_\_\_\_ Adequately verifies patient identification using at least two forms of ID
  - \_\_\_\_\_ \_\_\_\_\_ Retrieves previous films, studies or results as necessary
  - \_\_\_\_\_ \_\_\_\_\_ Ensures hot-lab computer entries (e.g. dose logs) are complete and accurate
  - \_\_\_\_\_ \_\_\_\_\_ Properly labels all images (e.g. Ant, Post) and documents necessary info in patient chart

## Technical Skills

- 1/28/22 2/11/22 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.
- \_\_\_\_\_ \_\_\_\_\_ Demonstrates knowledge of technical procedures; uses procedure manual/notes
  - \_\_\_\_\_ \_\_\_\_\_ Conforms with ALARA principle: wears film badges, gloves, uses shields, monitors time
  - \_\_\_\_\_ \_\_\_\_\_ Uses proper IV technique (avoids extravasations and injects in a timely manner)
  - \_\_\_\_\_ \_\_\_\_\_ Correctly performs detector quality assurance procedures
  - \_\_\_\_\_ \_\_\_\_\_ Prepares imaging room for procedure: cleans equipment, changes linens
  - \_\_\_\_\_ \_\_\_\_\_ Positions patient or detector in required positions for all procedures
  - \_\_\_\_\_ \_\_\_\_\_ Correctly sets all computer acquisition parameters
  - \_\_\_\_\_ \_\_\_\_\_ Correctly processes digital images
  - \_\_\_\_\_ \_\_\_\_\_ Performs accurate calculations on non-imaging procedures
  - \_\_\_\_\_ \_\_\_\_\_ Checks images/views with appropriate individual prior to releasing patient

## Patient Care

- 1/28/22 2/11/22 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.
- \_\_\_\_\_ \_\_\_\_\_ Is courteous and considerate to patient and puts patient at ease during exam
  - \_\_\_\_\_ \_\_\_\_\_ Explains procedure to patient, welcomes and answers questions
  - \_\_\_\_\_ \_\_\_\_\_ Ensures patient comfort and safety throughout exam
  - \_\_\_\_\_ \_\_\_\_\_ Completes/verifies patient preparation procedures according to protocol

Comments:

Clinic Supervisor's Signature: \_\_\_\_\_ (only for 2/11/22)



# VA End of Rotation Evaluation Q3.2

Student Name \_\_\_\_\_ Site: \_\_\_\_\_ Dates: 2/15-4/1/22

**Grade:** A = Outstanding Performance; B = Above average; C = Satisfactory; D = Needs Improvement; F = Unsatisfactory (May result in Clinical Probation or possible dismissal); N/A Not Applicable.

## Behavioral Objectives

3/11/20 3/25/22 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.

- \_\_\_\_\_ \_\_\_\_\_ Cooperation -ability to work harmoniously with coworkers at all levels
- \_\_\_\_\_ \_\_\_\_\_ Dependability -completes assigned work; follows task through to completion
- \_\_\_\_\_ \_\_\_\_\_ Adaptability -ability to modify procedure to a given situation
- \_\_\_\_\_ \_\_\_\_\_ Motivation -puts forth enthusiastic effort and displays a desire to learn
- \_\_\_\_\_ \_\_\_\_\_ Personal Appearance -follows dress code, neat in appearance, practices good hygiene
- \_\_\_\_\_ \_\_\_\_\_ Punctuality -reports to department and is ready to begin work on time

## Administrative and Clerical Skills

3/11/20 3/25/22 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.

- \_\_\_\_\_ \_\_\_\_\_ Verifies requisition (correct study, patient, radiopharm on order w/ doctor's approval)
- \_\_\_\_\_ \_\_\_\_\_ Screens patient history/labs for appropriateness including nursing/pregnancy screen
- \_\_\_\_\_ \_\_\_\_\_ Adequately verifies patient identification using at least two forms of ID
- \_\_\_\_\_ \_\_\_\_\_ Retrieves previous films, studies or results as necessary
- \_\_\_\_\_ \_\_\_\_\_ Ensures hot-lab computer entries (e.g. dose logs) are complete and accurate
- \_\_\_\_\_ \_\_\_\_\_ Properly labels all images (e.g. Ant, Post) and documents necessary info in patient chart

## Technical Skills

3/11/20 3/25/22 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.

- \_\_\_\_\_ \_\_\_\_\_ Demonstrates knowledge of technical procedures; uses procedure manual/notes
- \_\_\_\_\_ \_\_\_\_\_ Conforms with ALARA principle: wears film badges, gloves, uses shields, monitors time
- \_\_\_\_\_ \_\_\_\_\_ Uses proper IV technique (avoids extravasations and injects in a timely manner)
- \_\_\_\_\_ \_\_\_\_\_ Correctly performs detector quality assurance procedures
- \_\_\_\_\_ \_\_\_\_\_ Prepares imaging room for procedure: cleans equipment, changes linens
- \_\_\_\_\_ \_\_\_\_\_ Positions patient or detector in required positions for all procedures
- \_\_\_\_\_ \_\_\_\_\_ Correctly sets all computer acquisition parameters
- \_\_\_\_\_ \_\_\_\_\_ Correctly processes digital images
- \_\_\_\_\_ \_\_\_\_\_ Performs accurate calculations on non-imaging procedures
- \_\_\_\_\_ \_\_\_\_\_ Checks images/views with appropriate individual prior to releasing patient

## Patient Care

3/11/20 3/25/22 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.

- \_\_\_\_\_ \_\_\_\_\_ Is courteous and considerate to patient and puts patient at ease during exam
- \_\_\_\_\_ \_\_\_\_\_ Explains procedure to patient, welcomes and answers questions
- \_\_\_\_\_ \_\_\_\_\_ Ensures patient comfort and safety throughout exam
- \_\_\_\_\_ \_\_\_\_\_ Completes/verifies patient preparation procedures according to protocol

Comments:

Clinic Supervisor's Signature: \_\_\_\_\_ (only for 3/25/22)

# VA End of Rotation Evaluation Q4.1

Student Name \_\_\_\_\_ Site: \_\_\_\_\_ Dates: 4/11 – 5/20/22

**Grade:** A = Outstanding Performance; B = Above average; C = Satisfactory; D = Needs Improvement; F = Unsatisfactory (May result in Clinical Probation or possible dismissal); N/A Not Applicable.

## Behavioral Objectives

5/6/22 5/20/22 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ Cooperation -ability to work harmoniously with coworkers at all levels  
\_\_\_\_\_  
\_\_\_\_\_ Dependability -completes assigned work; follows task through to completion  
\_\_\_\_\_  
\_\_\_\_\_ Adaptability -ability to modify procedure to a given situation  
\_\_\_\_\_  
\_\_\_\_\_ Motivation -puts forth enthusiastic effort and displays a desire to learn  
\_\_\_\_\_  
\_\_\_\_\_ Personal Appearance -follows dress code, neat in appearance, practices good hygiene  
\_\_\_\_\_  
\_\_\_\_\_ Punctuality -reports to department and is ready to begin work on time

## Administrative and Clerical Skills

5/6/22 5/20/22 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ Verifies requisition (correct study, patient, radiopharm on order w/ doctor's approval)  
\_\_\_\_\_  
\_\_\_\_\_ Screens patient history/labs for appropriateness including nursing/pregnancy screen  
\_\_\_\_\_  
\_\_\_\_\_ Adequately verifies patient identification using at least two forms of ID  
\_\_\_\_\_  
\_\_\_\_\_ Retrieves previous films, studies or results as necessary  
\_\_\_\_\_  
\_\_\_\_\_ Ensures hot-lab computer entries (e.g. dose logs) are complete and accurate  
\_\_\_\_\_  
\_\_\_\_\_ Properly labels all images (e.g. Ant, Post) and documents necessary info in patient chart

## Technical Skills

5/6/22 5/20/22 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ Demonstrates knowledge of technical procedures; uses procedure manual/notes  
\_\_\_\_\_  
\_\_\_\_\_ Conforms with ALARA principle: wears film badges, gloves, uses shields, monitors time  
\_\_\_\_\_  
\_\_\_\_\_ Uses proper IV technique (avoids extravasations and injects in a timely manner)  
\_\_\_\_\_  
\_\_\_\_\_ Correctly performs detector quality assurance procedures  
\_\_\_\_\_  
\_\_\_\_\_ Prepares imaging room for procedure: cleans equipment, changes linens  
\_\_\_\_\_  
\_\_\_\_\_ Positions patient or detector in required positions for all procedures  
\_\_\_\_\_  
\_\_\_\_\_ Correctly sets all computer acquisition parameters  
\_\_\_\_\_  
\_\_\_\_\_ Correctly processes digital images  
\_\_\_\_\_  
\_\_\_\_\_ Performs accurate calculations on non-imaging procedures  
\_\_\_\_\_  
\_\_\_\_\_ Checks images/views with appropriate individual prior to releasing patient

## Patient Care

5/6/22 5/20/22 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ Is courteous and considerate to patient and puts patient at ease during exam  
\_\_\_\_\_  
\_\_\_\_\_ Explains procedure to patient, welcomes and answers questions  
\_\_\_\_\_  
\_\_\_\_\_ Ensures patient comfort and safety throughout exam  
\_\_\_\_\_  
\_\_\_\_\_ Completes/verifies patient preparation procedures according to protocol

Comments:

Clinic Supervisor's Signature: \_\_\_\_\_ (only for 5/20/22)

# VA End of Rotation Evaluation Q4.2

Student Name \_\_\_\_\_ Site: \_\_\_\_\_ Dates: 5/23 – 7/1/22

**Grade:** A = Outstanding Performance; B = Above average; C = Satisfactory; D = Needs Improvement; F = Unsatisfactory (May result in Clinical Probation or possible dismissal); N/A Not Applicable.

## Behavioral Objectives

- 6/17/22 7/1/22 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.
- \_\_\_\_\_ Cooperation -ability to work harmoniously with coworkers at all levels
- \_\_\_\_\_ Dependability -completes assigned work; follows task through to completion
- \_\_\_\_\_ Adaptability -ability to modify procedure to a given situation
- \_\_\_\_\_ Motivation -puts forth enthusiastic effort and displays a desire to learn
- \_\_\_\_\_ Personal Appearance -follows dress code, neat in appearance, practices good hygiene
- \_\_\_\_\_ Punctuality -reports to department and is ready to begin work on time

## Administrative and Clerical Skills

- 6/17/22 7/1/22 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.
- \_\_\_\_\_ Verifies requisition (correct study, patient, radiopharm on order w/ doctor's approval)
- \_\_\_\_\_ Screens patient history/labs for appropriateness including nursing/pregnancy screen
- \_\_\_\_\_ Adequately verifies patient identification using at least two forms of ID
- \_\_\_\_\_ Retrieves previous films, studies or results as necessary
- \_\_\_\_\_ Ensures hot-lab computer entries (e.g. dose logs) are complete and accurate
- \_\_\_\_\_ Properly labels all images (e.g. Ant, Post) and documents necessary info in patient chart

## Technical Skills

- 6/17/22 7/1/22 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.
- \_\_\_\_\_ Demonstrates knowledge of technical procedures; uses procedure manual/notes
- \_\_\_\_\_ Conforms with ALARA principle: wears film badges, gloves, uses shields, monitors time
- \_\_\_\_\_ Uses proper IV technique (avoids extravasations and injects in a timely manner)
- \_\_\_\_\_ Correctly performs detector quality assurance procedures
- \_\_\_\_\_ Prepares imaging room for procedure: cleans equipment, changes linens
- \_\_\_\_\_ Positions patient or detector in required positions for all procedures
- \_\_\_\_\_ Correctly sets all computer acquisition parameters
- \_\_\_\_\_ Correctly processes digital images
- \_\_\_\_\_ Performs accurate calculations on non-imaging procedures
- \_\_\_\_\_ Checks images/views with appropriate individual prior to releasing patient

## Patient Care

- 6/17/22 7/1/22 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.
- \_\_\_\_\_ Is courteous and considerate to patient and puts patient at ease during exam
- \_\_\_\_\_ Explains procedure to patient, welcomes and answers questions
- \_\_\_\_\_ Ensures patient comfort and safety throughout exam
- \_\_\_\_\_ Completes/verifies patient preparation procedures according to protocol

Comments:

Clinic Supervisor's Signature: \_\_\_\_\_ (only for 7/1/22)

# VA End of Rotation Evaluation Q5.1

Student Name \_\_\_\_\_ Site: \_\_\_\_\_ Dates: 7/11 – 8/26/22

**Grade:** A = Outstanding Performance; B = Above average; C = Satisfactory; D = Needs Improvement; F = Unsatisfactory (May result in Clinical Probation or possible dismissal); N/A Not Applicable.

## Behavioral Objectives

8/12/22 8/26/22 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.

- \_\_\_\_\_ \_\_\_\_\_ Cooperation -ability to work harmoniously with coworkers at all levels
- \_\_\_\_\_ \_\_\_\_\_ Dependability -completes assigned work; follows task through to completion
- \_\_\_\_\_ \_\_\_\_\_ Adaptability -ability to modify procedure to a given situation
- \_\_\_\_\_ \_\_\_\_\_ Motivation -puts forth enthusiastic effort and displays a desire to learn
- \_\_\_\_\_ \_\_\_\_\_ Personal Appearance -follows dress code, neat in appearance, practices good hygiene
- \_\_\_\_\_ \_\_\_\_\_ Punctuality -reports to department and is ready to begin work on time

## Administrative and Clerical Skills

8/12/22 8/26/22 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.

- \_\_\_\_\_ \_\_\_\_\_ Verifies requisition (correct study, patient, radiopharm on order w/ doctor's approval)
- \_\_\_\_\_ \_\_\_\_\_ Screens patient history/labs for appropriateness including nursing/pregnancy screen
- \_\_\_\_\_ \_\_\_\_\_ Adequately verifies patient identification using at least two forms of ID
- \_\_\_\_\_ \_\_\_\_\_ Retrieves previous films, studies or results as necessary
- \_\_\_\_\_ \_\_\_\_\_ Ensures hot-lab computer entries (e.g. dose logs) are complete and accurate
- \_\_\_\_\_ \_\_\_\_\_ Properly labels all images (e.g. Ant, Post) and documents necessary info in patient chart

## Technical Skills

8/12/22 8/26/22 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.

- \_\_\_\_\_ \_\_\_\_\_ Demonstrates knowledge of technical procedures; uses procedure manual/notes
- \_\_\_\_\_ \_\_\_\_\_ Conforms with ALARA principle: wears film badges, gloves, uses shields, monitors time
- \_\_\_\_\_ \_\_\_\_\_ Uses proper IV technique (avoids extravasations and injects in a timely manner)
- \_\_\_\_\_ \_\_\_\_\_ Correctly performs detector quality assurance procedures
- \_\_\_\_\_ \_\_\_\_\_ Prepares imaging room for procedure: cleans equipment, changes linens
- \_\_\_\_\_ \_\_\_\_\_ Positions patient or detector in required positions for all procedures
- \_\_\_\_\_ \_\_\_\_\_ Correctly sets all computer acquisition parameters
- \_\_\_\_\_ \_\_\_\_\_ Correctly processes digital images
- \_\_\_\_\_ \_\_\_\_\_ Performs accurate calculations on non-imaging procedures
- \_\_\_\_\_ \_\_\_\_\_ Checks images/views with appropriate individual prior to releasing patient

## Patient Care

8/12/22 8/26/22 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.

- \_\_\_\_\_ \_\_\_\_\_ Is courteous and considerate to patient and puts patient at ease during exam
- \_\_\_\_\_ \_\_\_\_\_ Explains procedure to patient, welcomes and answers questions
- \_\_\_\_\_ \_\_\_\_\_ Ensures patient comfort and safety throughout exam
- \_\_\_\_\_ \_\_\_\_\_ Completes/verifies patient preparation procedures according to protocol

Comments:

Clinic Supervisor's Signature: \_\_\_\_\_ (only for 8/26/22)

# VA End of Rotation Evaluation Q5.2

Student Name \_\_\_\_\_ Site: \_\_\_\_\_ Dates: 8/29 – 10/7/22

**Grade:** A = Outstanding Performance; B = Above average; C = Satisfactory; D = Needs Improvement; F = Unsatisfactory (May result in Clinical Probation or possible dismissal); N/A Not Applicable.

## Behavioral Objectives

9/23/22 10/7/22 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.

- \_\_\_\_\_ Cooperation -ability to work harmoniously with coworkers at all levels
- \_\_\_\_\_ Dependability -completes assigned work; follows task through to completion
- \_\_\_\_\_ Adaptability -ability to modify procedure to a given situation
- \_\_\_\_\_ Motivation -puts forth enthusiastic effort and displays a desire to learn
- \_\_\_\_\_ Personal Appearance -follows dress code, neat in appearance, practices good hygiene
- \_\_\_\_\_ Punctuality -reports to department and is ready to begin work on time

## Administrative and Clerical Skills

9/23/22 10/7/22 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.

- \_\_\_\_\_ Verifies requisition (correct study, patient, radiopharm on order w/ doctor's approval)
- \_\_\_\_\_ Screens patient history/labs for appropriateness including nursing/pregnancy screen
- \_\_\_\_\_ Adequately verifies patient identification using at least two forms of ID
- \_\_\_\_\_ Retrieves previous films, studies or results as necessary
- \_\_\_\_\_ Ensures hot-lab computer entries (e.g. dose logs) are complete and accurate
- \_\_\_\_\_ Properly labels all images (e.g. Ant, Post) and documents necessary info in patient chart

## Technical Skills

9/23/22 10/7/22 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.

- \_\_\_\_\_ Demonstrates knowledge of technical procedures; uses procedure manual/notes
- \_\_\_\_\_ Conforms with ALARA principle: wears film badges, gloves, uses shields, monitors time
- \_\_\_\_\_ Uses proper IV technique (avoids extravasations and injects in a timely manner)
- \_\_\_\_\_ Correctly performs detector quality assurance procedures
- \_\_\_\_\_ Prepares imaging room for procedure: cleans equipment, changes linens
- \_\_\_\_\_ Positions patient or detector in required positions for all procedures
- \_\_\_\_\_ Correctly sets all computer acquisition parameters
- \_\_\_\_\_ Correctly processes digital images
- \_\_\_\_\_ Performs accurate calculations on non-imaging procedures
- \_\_\_\_\_ Checks images/views with appropriate individual prior to releasing patient

## Patient Care

9/23/22 10/7/22 ← The optional 1<sup>st</sup> grade column is only for guidance. The 2<sup>nd</sup> is the official grade.

- \_\_\_\_\_ Is courteous and considerate to patient and puts patient at ease during exam
- \_\_\_\_\_ Explains procedure to patient, welcomes and answers questions
- \_\_\_\_\_ Ensures patient comfort and safety throughout exam
- \_\_\_\_\_ Completes/verifies patient preparation procedures according to protocol

Comments:

Clinic Supervisor's Signature: \_\_\_\_\_ (only for 10/7/22)

# CT Experience for the Nuclear Medicine Technologist

The CT rotation is designed to familiarize the student with the knowledge and skill necessary to setup, acquire and process a variety of CT studies. Please note that the student may not administer contrast agents or operate imaging machinery without supervision from a registered technologist or physician.

Students must be able to perform clinical procedures according to the specific procedural requirements, independently, from beginning to end. When deemed proficient, the verifying RT shall sign-off on ARRT.org. Please note that to receive credit toward a post-primary certification, the student must be verified on at least 3 (but no more than 5) repetitions from a minimum of 25 of the 54 procedures listed below. **No more than 1 procedure may be documented per patient.** A total of 125 procedures must be completed in a 2 year period. CT procedures performed in conjunction with a nuclear medicine study on a hybrid scanner must be of 'diagnostic-quality'.

Source: <https://www.arrt.org/pdfs/Disciplines/Clinical-Experience/CT-Clinical-Experience.pdf>

## A. Head and Neck

1. head without and/or with contrast
2. sinuses
3. facials (orbits, mandible)
4. temporal bones / IACs
5. trauma head
6. vascular head (CTA)
7. soft tissue neck
8. vascular neck (CTA)

## B. Spine and Musculoskeletal

1. lumbar
2. cervical
3. thoracic
4. spinal trauma
5. upper extremity
6. lower extremity
7. pelvic girdle; hips
8. musculoskeletal trauma
9. vascular extremity (CTA)

## C. Chest

1. chest without and/or with contrast
2. HRCT
3. vascular chest (e.g., PE, CTA, Aorta)
4. chest trauma
5. lung nodule study
6. heart (e.g., calcium scoring, angio)

## D. Abdomen and Pelvis

1. abdomen without and/or with contrast
2. liver (multi-phase)
3. kidneys (multi-phase)
4. pancreas (multi-phase)
5. adrenals
6. enterography study

7. appendicitis study
8. renal stone (without contrast)
9. abdominal trauma
10. vascular abdomen (CTA)
11. CT intravenous urogram/IVP
12. pelvis without and/or with contrast
13. bladder
14. pelvic trauma
15. vascular pelvis (CTA)
16. colorectal studies (rectal contrast)

## E. Special Procedures

1. biopsies
2. drainage
3. aspirations
4. CT arthrography
5. diskography
6. myelography
7. colonography or virtual colonography
8. brain perfusion
9. radiation therapy planning
10. transplant studies

## F. Image Display and Post Processing

1. geometric or distance measurements
2. region of interest measurement (ROI)
3. retrospective reconstruction
4. multiplanar reconstruction (MPR)
5. 3D rendering (MIP, SSD, VR)

## G. Quality Assurance

1. calibration checks
2. CT # & standard deviation (water phantom)
3. linearity
4. spatial resolution
5. contrast resolution



## DXA (Bone Densitometry)

DXA studies (and the pursuit of a limited x-ray technician license in DXA imaging) are optional. Students who wish to pursue this elective shall greet and identify the patient in a courteous fashion. Prior to scanning, the student shall ensure that the patient has complied with all preparatory requirements. Imaging shall begin and end in a timely manner. The correct computer acquisition parameters (including patient demographics) shall be programmed in advance. The patient shall be positioned according to department protocols using the foot angle, knee support and leg-lift cushion as required. Routine views shall include a lumbar spine scan and an upper femur. Wrist or whole body scans may be performed where available. The technologist shall avoid scanning more body area than is required to obtain satisfactory results.

Processing shall include necessary filtering, image contrast adjustment and labeling. Any views of substandard quality shall be repeated or reprocessed as needed. Images, calculations and related documentation shall be verified by the supervising technologist and submitted to the interpreting physician prior to the patient's departure. Additional views shall be taken when requested. The student shall have a working knowledge of the characteristics that distinguish normal versus abnormal biodistribution/uptake.

The student technologist shall demonstrate appropriate levels of patient care throughout the imaging procedure. Every effort shall be made to ensure patient comfort and safety. Appropriate communications shall be maintained with the patient throughout the exam. The student technologist shall review patient expectations and anticipated time for imaging. The patient shall be asked to remove attenuating or restrictive objects. The patient shall be assisted onto the imaging table as needed. All wires and tubes shall be secured. Upon completion, the student technologist shall clean the imaging area, change the linens and prepare as needed for subsequent patients. At no time shall the student technologist offer their own medical opinion or violate the patient's privacy rights.

The student must perform 20 scans\* without error before the end of the academic term. These must include: 5 scans of the spine, 5 scans of the femoral neck and 10 scans of the forearm, calcaneus or other approved extremity site\*\*. Each scan must be verified by a technologist or physician licensed to perform DXA. In addition, the student must scan at least 4 QC phantoms and analyze the results. The competency sign-off sheets are provided in the following pages.

Supervisor license numbers can be verified on the following site: <http://rhubxray.cdph.ca.gov/>

Application for Limited X-ray Licensure to perform Bone Densitometry in the State of California can be found here: <https://www.cdph.ca.gov/CDPH%20Document%20Library/ControlledForms/cdph8232d.pdf>

\* The following list of studies meets the requirement for DXA certification in the State of California. For national-level certification through ARRT, additional studies and scanning requirements apply.

\*\* Forearm or other extremity scans are not common. Most students will find it challenging to complete the required number before graduation. Therefore, students who wish to acquire a 'limited permit X-ray technician bone densitometry' must pursue any and all opportunities to scan extremities from the earliest possible date in the training program. Spine and Femoral-neck scans are far more common.



# DXA Sign-off Form

Name: \_\_\_\_\_ Clinical Site \_\_\_\_\_ Date \_\_\_\_\_ Supervisor Name and CA License Number  
lookup: <http://rhubxray.cdph.ca.gov/>

Spine Scan 1: \_\_\_\_\_

Spine Scan 2: \_\_\_\_\_

Spine Scan 3: \_\_\_\_\_

Spine Scan 4: \_\_\_\_\_

Spine Scan 5: \_\_\_\_\_

Femur neck 1: \_\_\_\_\_

Femur neck 2: \_\_\_\_\_

Femur neck 3: \_\_\_\_\_

Femur neck 4: \_\_\_\_\_

Femur neck 5: \_\_\_\_\_

Forearm 1: \_\_\_\_\_

Forearm 2: \_\_\_\_\_

Forearm 3: \_\_\_\_\_

Forearm 4: \_\_\_\_\_

Forearm 5: \_\_\_\_\_

Forearm 6: \_\_\_\_\_

Forearm 7: \_\_\_\_\_

Forearm 8: \_\_\_\_\_

Forearm 9: \_\_\_\_\_

Forearm 10: \_\_\_\_\_

QC Phantom Scans: 1) Phantom used: \_\_\_\_\_ Date \_\_\_\_\_

2) Phantom used: \_\_\_\_\_ Date \_\_\_\_\_

3) Phantom used: \_\_\_\_\_ Date \_\_\_\_\_

4) Phantom used: \_\_\_\_\_ Date \_\_\_\_\_

# Dosimetry Reports

Name: \_\_\_\_\_

Month	Whole Body (WB) dose equivalent	Finger/URE(FN) dose equivalent	Sign if you have reviewed these readings.
July, 2021:	_____ mrem	_____ mrem	_____
August:	_____ mrem	_____ mrem	_____
Sept:	_____ mrem	_____ mrem	_____
October:	_____ mrem	_____ mrem	_____
November:	_____ mrem	_____ mrem	_____
December:	_____ mrem	_____ mrem	_____
Jan, 2022:	_____ mrem	_____ mrem	_____
Feb:	_____ mrem	_____ mrem	_____
Mar:	_____ mrem	_____ mrem	_____
April:	_____ mrem	_____ mrem	_____
May:	_____ mrem	_____ mrem	_____
June:	_____ mrem	_____ mrem	_____
July:	_____ mrem	_____ mrem	_____
August:	_____ mrem	_____ mrem	_____
Sept:	_____ mrem	_____ mrem	_____
October:	_____ mrem	_____ mrem	_____

Monthly readings < 100 mrem WB or < 1000 mrem URE are recommended.  
 Use good ALARA technique (↓time, ↑distance, ↑shielding) to keep numbers low.

BIRTH DATE	SEX	BT	BR	BP	SERVICE	DOSE EQUIVALENT IN					
						MONITORING PERIOD		CURRENT			
						FIRST DAY	LAST DAY	DEEP	EYE	SHALL.	NEUT
580407	F	36	WB	M	06/01/2014	06/30/2014	4	4	4		
490912	M	18	URE	FN	M	06/01/2014	06/30/2014			396	
490912	M	36	WB	M	06/01/2014	06/30/2014	48	48	48		