

TITLE: Radiation Safety Monitoring Policy**POLICY NO: R-3****EFFECTIVE DATE: 9-1-2024****REVISION DATE: 8-16-21, 6-6-22, 8-7-23, 4-15-24****Purpose:**

The purpose of this policy is to inform the student of the radiation policies of the Radiography Program.

Policy:**Education – Radiation Safety:**

Students must protect themselves, their patients, visitors and members of the health care team from ionizing radiation by practicing radiation safety and complying with ALARA principles. Students are provided instruction on radiation safety and introduced to ALARA principles at the onset of the program in AHLT-R103. Radiation safety and ALARA principles are reviewed throughout the duration of the program.

In keeping with JRCERT Standards: Radiation Safety, students are required to employ proper radiation safety practices. Students must understand basic radiation safety practices prior to being assigned to a clinical setting. Students must practice radiation safety by adhering to the following:

1. Students must never repeat any radiograph without the direct supervision of a registered radiographer. There are no exceptions to this policy and failure to comply with the Repeat Policy will result in disciplinary action that could delay progression into the program.
2. Students must not hold image receptors or patients during any radiographic procedure. A student should not restrain/hold a patient during a radiographic procedure when an immobilization method is the appropriate standard of care. When immobilization techniques fail, students are encouraged to ask assistance from family members and non-radiology members of the health care team; lead shielding must be provided.
3. As students progress in the program, they must become increasingly proficient in the application of radiation safety practices.
4. Students must demonstrate increased collimation when imaging patients as they progress in the program.
5. Students that declare a competency must also know exposure factors for the study.
6. Students must ask patients in child bearing years for possibility of pregnancy.
7. Students must effectively communicate with patients for radiation safety.
8. Students must retain knowledge of exams to prove mastery of the material for radiation safety.
9. Students must understand and apply the concepts of radiation safety in all exams.
10. Students must follow radiation safety protocols specific to a clinical agency when rotating through the clinical site.
11. Students must demonstrate knowledge of radiographic technique selection appropriate to the exam.
12. Students must prepare the room before an exam (as applicable) and be organized before, during, and after the exam.
13. Students must be able to handle complex exams as they progress through the program.
14. Students are not permitted to use fluoroscopy to locate or position anatomy for any examination in any clinical setting.
15. Students are required to wear lead aprons during any mobile radiographic procedure; lead aprons and thyroid shields during any fluoroscopic/surgical procedure.

- Students must successfully complete radiation safety training prior to entering the clinical setting and will be required to review material covering radiation safety and ALARA principles throughout the program.

Radiation Monitoring Policy:

All monthly radiation badge dosimetry readings for students will be monitored by the Radiography program's designated Radiation Safety Officer, the Program Director. Student radiographers should adhere to ALARA standards as outlined by the federal regulations of the United States Nuclear Regulatory Commission (NRC) Guide. This information is found in [Subpart C – Occupational Dose Limits](#).

Radiation Safety Policy:

The program uses an ALARA policy (As Low As Reasonably Achievable) to keep radiation exposure as low as possible. Students who exceed a monthly dose of 20 mrem or higher in clinical will be contacted by the program director and/or clinical coordinator. If a quarterly dose of 60 mrem is recorded in lab, the student will be contacted by the program director and/or clinical coordinator. The Clinical Coordinator and Program Director reviews all dose report results monthly. Quarterly doses that exceed Level I and Level II criteria are reviewed and investigated.

Level I and Level II criteria are set at 10% and 30% of the quarterly occupational exposure limit.

Exposure Type	Level I (mrem per quarter)	Level II (mrem per quarter)	Quarter Limit (mrem per quarter)	Annual Limit Per Regulation (mrem per year)
Deep Dose Equivalent (Whole Body) (DDE)	125 mrem	375 mrem	1250 mrem	5000 mrem
Lens of the Eye Dose Equivalent (LDE)	375 mrem	1250 mrem	3750 mrem	15000 mrem
Shallow (Skin/Extremity) Dose Equivalent (SDE)	1250 mrem	3750 mrem	12500 mrem	50000 mrem

- Radiation badge readings that equal or exceed dose limitations (Level I -125 mrem / qtr or Level II — 375 mrem / qtr) per year will require the student to have a counseling session with the program director and/or radiation safety officer.
- Radiation exposure doses recorded at or above Level II - 30% of Federal Limits or higher - 1250 mrem/ qtr) will be investigated according to NRC regulations.
- Radiation badge readings that exceed Level I, but do not exceed Level II must participate in a discussion about radiation dose reduction and radiation protection and safety.
- Radiation badge readings that exceed Level II, are required to submit a written history of their clinical activities to help the faculty and the student determine the cause of the excess exposure dose. Students will also be required to attend a remediation session covering radiation safety, radiation protection and ALARA principles.

Radiation Monitoring Devices:

Students are provided with radiation exposure monitoring badges at the start of the radiography program. When participating in clinical experience or lab, the student must wear their assigned radiation monitoring badge. Radiation badges should not be switched or exchanged between students.

Absence of the radiation monitoring badge will constitute a violation of program policy and the student will be asked to leave clinic or lab until the radiation monitoring badge is available. The student will be required to make-up any missed time – personal time cannot be used.

Radiation badges should be worn at the collar and placed outside the lead apron during fluoroscopic/portable/surgical procedures. Radiation monitoring badges should be stored in a secure area when not worn, away from radiation sources. Badges should be handled with care. Lost or damaged badges must be reported to either the Clinical Coordinator or the Program Director for replacement.

Clinic radiation badges will be returned on a monthly basis to the Clinical Coordinator. Lab radiation badges will be returned on a quarterly basis.

Dosimetry badges must be presented for readings on time. Once the report is available, the Clinical Coordinator will review and verify the amount of exposure with the student within 30 days of receiving the report. The Clinical Coordinator will upload a copy of the badge report to canvas. This copy will include a signature from the radiation safety officer for compliance of stated thresholds along with compliance to ALARA standards. Students must complete an online quiz in canvas to verify that the report has been viewed. Badge reports will be stored online through secure file formatting. Students must return their radiation monitoring badges at the conclusion of the radiography program and each student will be provided with a copy of their final badge reading approximately one month after graduation.

Students will be expected to wear required radiation protective devices (i.e. aprons, gloves, etc.) when participating in applicable radiographic exams. Students are expected to follow the American Registry of Radiologic Technologists Standard of Ethics. The same standards apply to limiting radiation exposure to the patient through effective shielding techniques and proper selection of exposure factors.

Students should shield depending on clinical site protocols.

This policy follows R-13 and R-24, Notification for Improvement and Violation policies.