

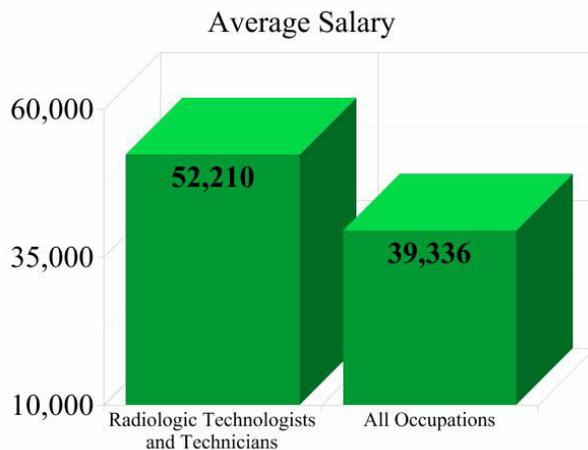
Radiologic Technologists and Technicians

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WHAT THEY DO

Radiologic technologists and technicians perform diagnostic imaging examination. Radiologic technicians perform imaging examinations like x rays while technologists use other imaging modalities such as computed tomography, magnetic resonance imaging, and mammography.

Radiologic technicians, sometimes referred to as radiographers, produce x-ray films (radiographs) of parts of the human body for use in diagnosing medical problems. They prepare patients for radiologic examinations by explaining the procedure, removing jewelry and other articles through which x rays cannot pass, and positioning patients so that the parts of the body can be appropriately radiographed. To prevent unnecessary exposure to radiation, these workers surround the exposed area with radiation protection devices, such as lead shields, or limit the size of the x-ray beam. Radiographers position radiographic equipment at the correct angle and height over the appropriate area of a patient's body. Using instruments similar to a measuring tape they may measure the thickness of the section to be radiographed and set controls on the x-ray machine to produce radiographs of the appropriate density, detail, and contrast.



Radiologic technologists and technicians must follow physicians' orders precisely and conform to regulations concerning the use of radiation to protect themselves, their patients, and their coworkers from unnecessary exposure.

In addition to preparing patients and operating equipment, radiologic technologists and technicians keep patient records and adjust and maintain equipment. They also may prepare work schedules, evaluate purchases of equipment, or manage a radiology department.

Radiologic technologists perform more complex imaging procedures. When performing fluoroscopies, for example, radiologic technologists prepare a solution for the patient to drink, allowing the radiologist (a physician who interprets radiographs) to see soft tissues in the body.

Some radiologic technologists specialize in computed tomography (CT), as CT technologists. CT scans produce a substantial amount of cross-sectional x rays of an area of the body. From those cross-sectional x rays, a three-dimensional image is made. The CT uses ionizing radiation; therefore, it requires the same precautionary measures that are used with x rays.

Radiologic technologists also can specialize in Magnetic Resonance Imaging (MR) as MR technologists. MR, like CT, produces multiple cross-sectional images to create a 3-dimensional image. Unlike CT and x rays, MR uses non-ionizing radio frequency to generate image contrast.

Radiologic technologists might also specialize in mammography. Mammographers use low dose x-ray systems to produce images of the breast.

In addition to radiologic technologists, others who conduct diagnostic imaging procedures include cardiovascular technologists and technicians, diagnostic medical sonographers, and nuclear medicine technologists.

EDUCATION REQUIRED

Formal training programs in radiography lead to a certificate, an associate degree, or a bachelor's degree. An associate degree is the most prevalent form of educational attainment among radiologic technologists and technicians. Some may receive a certificate. Certificate programs typically last around 21-24 months.

The Joint Review Committee on Education in Radiologic Technology accredits formal training programs in radiography. The committee accredited 213 programs resulting in a certificate, 397 programs resulting in an associate degree, and 35 resulting in a bachelor's degree in 2009. The programs provide both classroom and clinical instruction in anatomy and physiology, patient care procedures, radiation physics, radiation protection, principles of imaging, medical terminology, positioning of patients, medical ethics, radiobiology, and pathology.

Students interested in radiologic technology should take high school courses in mathematics, physics, chemistry, and biology.

Federal legislation protects the public from the hazards of unnecessary exposure to medical and dental radiation by ensuring that operators of radiologic equipment are properly trained. However, it is up to each State to require licensure of radiologic technologists. Most States require licensure for practicing radiologic technologists. Licensure requirements vary by State; for specific requirements contact your State's health board.

Radiologic Technologists and Technicians - Continued

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OTHER USEFUL SKILLS

The American Registry of Radiologic Technologists (ARRT) offers voluntary certification for radiologic technologists. In addition, a number of States use ARRT-administered exams for State licensing purposes. To be eligible for certification, technologists must graduate from an ARRT-approved accredited program and pass an examination. Many employers prefer to hire certified radiologic technologists. In order to maintain an ARRT certification, 24 hours of continuing education must be completed every 2 years.

Radiologic technologists should be sensitive to patients' physical and psychological needs. They must pay attention to detail, follow instructions, and work as part of a team. In addition, operating complicated equipment requires mechanical ability and manual dexterity.

HOW TO ADVANCE

With experience and additional training, staff technologists may become specialists, performing CT scanning, MR, mammography, or bone densitometry. Technologists also may advance, with additional education and certification, to become a radiologist assistant. The ARRT offers specialty certification in many radiologic specialties as well as a credentialing for radiologist assistants.

Experienced technologists also may be promoted to supervisor, chief radiologic technologist, and, ultimately, department administrator or director. Depending on the institution, courses or a master's degree in business or health administration may be necessary for the director's position.

Some technologists progress by specializing in the occupation to become instructors or directors in radiologic technology educational programs; others take jobs as sales representatives or instructors with equipment manufacturers.

WORK ENVIRONMENT

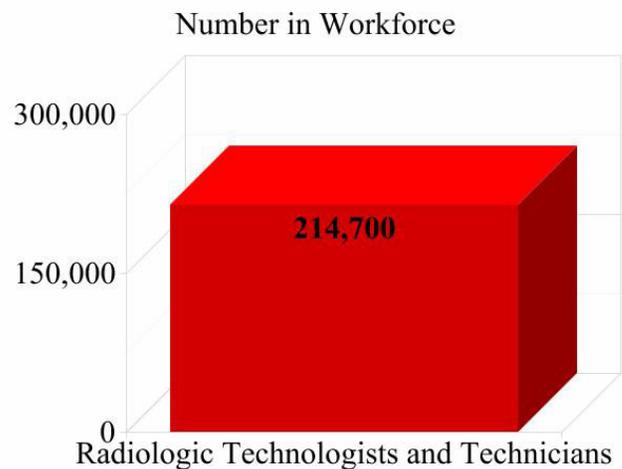
Physical stamina is important in this occupation because technologists and technicians are on their feet for long periods and may lift or turn disabled patients. Technologists and technicians work at diagnostic machines but also may perform some procedures at patients' bedsides. Some travel to patients in large vans equipped with sophisticated diagnostic equipment.

Most full-time radiologic technologists and technicians work about 40 hours a week. They may, however, have evening, weekend, or on-call hours. Some radiologic technologists and technicians work part time for more than one employer; for those, travel to and from facilities must be considered.

JOB GROWTH

Employment of radiologic technologists is expected to increase by about 17 percent from 2008 to 2018, faster than the average for all occupations. As the population grows and ages, there will be an increasing demand for diagnostic imaging. With age comes increased incidence of illness and injury, which often requires diagnostic imaging for diagnosis. In addition to diagnosis, diagnostic imaging is used to monitor the progress of disease treatment. With the increasing success of medical technologies in treating disease, diagnostic imaging will increasingly be needed to monitor progress of treatment.

The extent to which diagnostic imaging procedures are performed depends largely on cost and reimbursement considerations. However, accurate early disease detection allows for lower cost of treatment in the long run, which many third-party payers find favorable.



Although hospitals will remain the principal employer of radiologic technologists, a number of new jobs will be found in offices of physicians and diagnostic imaging centers. As technology advances many imaging modalities are becoming less expensive and more feasible to have in a physician's office

In addition to job growth, job openings also will arise from the need to replace technologists who leave the occupation. Those with knowledge of more than one diagnostic imaging procedure—such as CT, MR, and mammography—will have the best employment opportunities as employers seek to control costs by using multi-credentialed employees.

Demand for radiologic technologists and technicians can tend to be regional with some areas having large demand, while other areas are saturated. Technologists and technicians willing to relocate may have better job prospects.