



# Computed Tomography

Candidates for certification and registration are required to meet the Professional Requirements specified in the *ARRT Rules and Regulations*. ARRT's *Computed Tomography Clinical Experience Requirements* describe the specific eligibility requirements that must be documented as part of the application for certification and registration process.

The purpose of the clinical experience requirements is to verify that candidates have completed a subset of the clinical procedures within a discipline. Successful performance of these fundamental procedures, in combination with mastery of the cognitive knowledge and skills covered by the examination, provides the basis for the acquisition of the full range of clinical skills required in a variety of settings.

The job responsibilities typically required of staff computed tomography technologists are delineated through a periodic practice analysis. This results in a "task inventory." An advisory committee then determines the number of clinical procedures required to demonstrate adequate candidate experience in performing the tasks on the inventory.

Candidates for Computed Tomography certification and registration must document performance of a minimum of 125 repetitions of computed tomography procedures according to the criteria noted below. Procedures are documented, verified, and submitted when complete via an online tool accessible through My ARRT Info account on [arrt.org](http://arrt.org). ARRT encourages individuals to obtain education and experience beyond these minimum requirements.

Completion of each procedure must be verified by an ARRT certified and registered technologist (post-primary certification not required) or an interpreting physician. The verification process is described within the online tool.

## Specific Procedural Requirements

The clinical experience requirements for CT consist of 59 procedures in six different categories:

- A. Head, Spine, and Musculoskeletal
- B. Neck and Chest
- C. Abdomen and Pelvis
- D. Additional Procedures
- E. Image Display and Post Processing
- F. Quality Assurance

Candidates must document the performance of complete, diagnostic quality procedures according to the following requirements:

- Choose a minimum of 25 different procedures out of the 59 procedures on the following pages.
- Complete and document a minimum of three and a maximum of five repetitions of each chosen procedure; less than three will not be counted toward the total.
- A minimum total of 125 repetitions is required.
- No more than one procedure may be documented on one patient. For example, if an order requests chest, abdomen and pelvis scans for one patient, only one of these may be documented for clinical experience documentation.
- Computed Tomography procedures performed in conjunction with a PET or SPECT attenuation correction scan or a Radiation Therapy planning procedure are not eligible for CT Clinical Experience documentation.



## General Guidelines

To qualify as a complete, diagnostic quality CT imaging procedure, the candidate must demonstrate appropriate:

- evaluation of requisition and/or medical record
- preparation of examination room
- identification of patient
- patient assessment and education concerning the procedure
- documentation of patient history including allergies
- preparation and/or administration of contrast media when indicated
- patient positioning
- protocol selection
- parameter selection
- initiate scan
- image display and archiving
- documentation of procedure, treatment, and patient data in appropriate record
- patient discharge with postprocedure instructions
- CDC Standard Precautions
- radiation safety

and evaluate the resulting images for:

- image quality (\*e.g., motion, artifacts, noise)
- optimal demonstration of anatomic region (e.g., delayed imaging, reconstruction algorithm, slice thickness)
- exam completeness

Attention: Your certification and registration process has requirements to complete clinical procedures including activating actual CT scans, known as “initiating the scan” or “making the exposure.” You are responsible for ensuring state laws allow you to complete this requirement.

## Examples

Candidate A: This person works in a specialized setting and completes 25 different procedures (the minimum) from three of the six categories. To complete 125 repetitions, each of the 25 procedures was performed five times.

Candidate B: This person works in a facility that does most types of CT scans, so completing a wide variety of procedures was quite feasible. A total of 30 procedures from all six categories were completed and documented. Although most of these procedures were performed three times (the minimum), several of them were performed four or five times each until the candidate reached at least 125 procedures.

\* The abbreviation “e.g.,” is used to indicate that examples are listed in parentheses, but that it is not a complete list of all possibilities.



## Procedures

### A. Head, Spine, and Musculoskeletal

1. head without contrast
2. head with contrast\*
3. trauma head
4. vascular head (CTA/CTV)\*
5. brain perfusion\*
6. pituitary fossa\*
7. temporal bones/IACs
8. orbits
9. sinuses
10. facial bones/mandible
11. cervical spine
12. thoracic spine
13. lumbar spine
14. spinal trauma
15. upper extremity
16. lower extremity
17. shoulder and/or scapula
18. bony pelvis and/or hips
19. musculoskeletal trauma
20. vascular extremity/runoff (CTA/CTV)\*

### B. Neck and Chest

1. soft tissue neck
2. vascular neck (CTA/CTV)\*
3. chest without contrast
4. chest with contrast\*
5. HRCT
6. lung nodule study
7. low dose lung screening
8. chest trauma\*
9. vascular chest (e.g., PE, CTA/CTV, aorta)\*
10. heart (e.g., calcium scoring, coronary angiography\*)

### C. Abdomen and Pelvis

1. abdomen/pelvis without contrast
2. abdomen/pelvis with contrast\*
3. liver (multi-phase)\*
4. kidneys (multi-phase)\*
5. pancreas (multi-phase)\*
6. adrenals
7. enterography study
8. appendicitis study
9. renal stone protocol (without IV contrast)
10. abdominal trauma\*
11. vascular abdomen (CTA/CTV)\*
12. intravenous urogram/IVU\*
13. bladder
14. pelvic trauma\*
15. vascular pelvis (CTA/CTV)\*
16. colorectal studies (rectal contrast)

### D. Additional Procedures

1. biopsies
2. drainages
3. aspirations
4. pediatric (12 and under)
5. arthrography
6. discography
7. myelography

### E. Image Display and Post Processing

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

### F. Quality Assurance

1. calibration checks
2. CT number and standard deviation (water phantom)

\* The use of iodinated IV contrast is mandatory to document this procedure.