



# Breast Sonography

Certification and registration requirements for breast sonography are based on the results of a comprehensive practice analysis conducted by The American Registry of Radiologic Technologist (ARRT) staff and the Breast Sonography Practice Analysis and Continuing Qualification Requirements (CQR) Advisory Committee. The purpose of the practice analysis is to identify job responsibilities typically required of breast sonographers at entry into the profession. The results of the practice analysis are reflected in this document. The attached task inventory is the foundation for both the clinical experience requirements and the content specifications.

## Basis of Task Inventory

In 2019, the ARRT surveyed a large, national sample of breast sonographers to identify their responsibilities. When evaluating survey results, the advisory committee applied a 40% criterion. That is, to be included on the task inventory an activity must have been the responsibility of at least 40% of breast sonographers. The advisory committee could include an activity that did not meet the 40% criterion if there was a compelling rationale to do so (\*e.g., a task that falls below the 40% criterion but is expected to rise above the 40% criterion in the near future).

## Application to Clinical Requirements

The purpose of the clinical requirements is to verify that candidates have completed a subset of the clinical procedures within a modality. Successful performance of these fundamental procedures, in combination with mastery of the cognitive knowledge and skills covered by the certification examination, provides the basis for the acquisition of the full range of clinical skills required in a variety of settings. An activity must appear on the task inventory to be considered for inclusion in the clinical requirements. If an activity is designated as a mandatory requirement, survey results had to indicate that breast sonographers performed that activity. The advisory committee designated clinical activities performed by fewer breast sonographers, or which are carried out in only selected settings, as elective. The clinical requirements are available from ARRT's website ([www.arrt.org](http://www.arrt.org)).

## Application to Content Specifications

The purpose of the ARRT Breast Sonography Examination is to assess the knowledge and cognitive skills underlying the intelligent performance of the tasks typically required of breast sonographers at entry into the profession. The content specifications identify the knowledge areas underlying performance of the tasks on the task inventory. Every content category can be linked to one or more activities on the task inventory. Note that each activity on the task inventory is followed by a content category that identifies the section of the content specifications corresponding to that activity. The content specifications are available from ARRT's website ([www.arrt.org](http://www.arrt.org)).

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



<b>Activity</b>		<b>Content Categories</b> Legend: PC = Patient Care, IP = Image Production, P = Procedures
1.	Review imaging request to verify information is accurate, appropriate, and complete (e.g., patient history, clinical diagnosis, physician's orders).	PC.1.C
2.	Review patient's relevant previous imaging exams prior to the breast sonography exam.	PC.1.C.3.E.
3.	Interview patient to acquire clinical history (e.g., previous breast exams, personal and family history, prior surgeries) and document findings.	PC.1.A.3.
4.	Explain the breast sonography examination to the patient.	PC.1.A.2.
5.	Respond as appropriate to patient's questions regarding breast health by referencing ACR guidelines.	PC.1.A.1., IP.2.E.
6.	Refer patient's questions regarding findings and follow-up to the supervising physician (e.g., radiologist, surgeon) or referring provider.	IP.3.I.
7.	Respond as appropriate to questions regarding accreditation of ultrasound facilities and personnel.	PC.1.B.
	Explain the benefits and limitations of breast imaging utilizing the following modalities:	
8.	breast sonography	PC.1.A.3.
9.	automated whole breast ultrasound	PC.1.A.3.
10.	2D mammography	PC.1.A.3.
11.	3D mammography	PC.1.A.3.
12.	MRI	PC.1.A.3.
13.	nuclear medicine (e.g., BSGI, PET/ CT)	PC.1.A.3.
14.	CT	PC.1.A.3.
15.	Perform visual breast examination based on patient communication documenting location of lumps, scars, and breast changes, per protocol.	PC.1.A.3.A.
16.	Select equipment appropriate to the patient and the examination to be performed (e.g., transducer).	IP.1.A.
17.	Select technique in accordance with sonography protocol as determined by the supervising physician (e.g., radiologist, surgeon).	IP.2.A.
	Adjust machine settings for image optimization using the following as appropriate:	
18.	TGC	IP.2.A.4.
19.	power	IP.2.A.1.
20.	overall gain	IP.2.A.5.
21.	frequency	IP.1.B.



22.	amplitude	IP.1.B.
23.	depth of field	IP.2.A.3.
24.	focal zone	IP.2.A.2.
25.	harmonic imaging	IP.2.A.7.
26.	spatial compounding	IP.2.A.8.
27.	Position patient to demonstrate the desired anatomy (e.g., oblique, supine, decubitus, upright) providing for patient safety, comfort, and modesty.	PC.1.A.4.
28.	Use proper ergonomics when performing sonographic exams to prevent work related musculoskeletal disorders.	PC.1.A.4.
	Optimize the breast sonography exam using the following as appropriate:	
29.	stand-off pad	IP. 2.C.
30.	color Doppler	IP.2.F.
31.	power Doppler	IP.2.F.
32.	panoramic imaging	IP.2.F.
33.	fremitus	IP.2.F.
34.	Minimize ultrasound bioeffects.	IP.2.B.
35.	Annotate images to indicate anatomic plane, area of interest, and other relevant information per ACR practice parameters.	IP.3.A.
36.	Differentiate normal anatomy from abnormal findings during the breast sonography exam.	IP.3.A., IP.3.E.
37.	Identify and communicate sonographic echo patterns to the supervising physician (e.g., radiologist, surgeon) using appropriate terminology (e.g., anechoic, hypoechoic, hyperechoic, isoechoic).	IP.3.E.
38.	Obtain images that demonstrate appropriate findings during the breast sonography exam.	IP.3.A.
39.	Identify clinical versus non-clinical sonographic artifacts.	IP.3.B.
40.	Evaluate scanning technique for diagnostic quality and take corrective action as necessary.	IP.3.A., IP.3.B.
41.	Utilize the following tools in post-processing:	
42.	dynamic range	IP.2.A.6.
43.	cine loop	IP.2.A.9.
44.	gain	IP.2.A.5.
45.	annotations and measurements	IP.2.E.
46.	Record, display, archive, and retrieve images using PACS.	IP.3.C.
	Correlate sonographic images and findings with the following:	
47.	physical findings	PC.1.C.2.
48.	prior ultrasound	PC.1.C.3.
49.	mammogram	PC.1.C.3.A.



50.	ACR BI-RADS® classification	PC.1.A.5.
51.	breast MRI	PC.1.C.3.B.
52.	CT	PC.1.C.3.C.
53.	PET/CT	PC.1.C.3.D.
54.	Review preliminary breast sonography findings with supervising physician (e.g., radiologist, surgeon).	PC.1.E.
55.	Explain diagnostic findings to patient under the direction of the supervising physician (e.g., radiologist, surgeon).	PC.1.A.5
56.	Perform preventive maintenance (e.g., filters) on breast sonography equipment as indicated.	IP.3.D.
57.	Identify, report, and document any ultrasound equipment malfunctions (e.g., transducer, monitor).	IP.3.D.
58.	Clean or disinfect instruments and equipment, according to protocol.	IP.3.D.
59.	Perform regional lymph node and axillary sonography.	P.1.
	Perform breast sonography of the following lymph node areas for new cancer diagnoses, per protocol:	
60.	axilla	P.2
61.	supraclavicular	P.2.
62.	internal mammary	P.2.
63.	Perform screening breast ultrasound, per protocol, using a free hand technique with conventional equipment.	PC.1.A.1.B.
64.	Perform second look ultrasound for patients with positive screening results from mammography.	P.C.1.A.1.A.
65.	Perform second look ultrasound for patients with positive screening results from MRI.	PC.1.C.3.B.
66.	Perform survey breast ultrasound for multifocal and multicentric disease for patients with a new diagnosis of breast cancer.	PC.1.D.
67.	Respond as appropriate to questions from patient or patient's family regarding interventional procedures.	P. FOCUS OF QUESTIONS (FOC)
68.	Verify informed consent as necessary.	P.FOC
69.	Verify that time-out procedure is performed as necessary.	P.FOC
70.	Select and prepare equipment for interventional procedures.	P.FOC
71.	Position the patient to provide access for interventional procedures.	P.FOC
72.	Use sterile or aseptic technique as indicated.	P.FOC
73.	Communicate effectively with performing physician during interventional procedures.	P.FOC
	Assist with the following breast ultrasound interventional procedures and associated imaging:	
74.	cyst aspiration	P.3.D.1.



TASK INVENTORY

ARRT® BOARD APPROVED: **JANUARY 2020**  
IMPLEMENTATION DATE: **JULY 1, 2021**

75.	fluid aspiration	P.3.D.1.
76.	fine needle aspiration biopsy	P.3.D.2.
77.	needle core biopsy (e.g., spring loaded)	P.3.D.3.
78.	vacuum-assisted core biopsy	P.3.D.4.
79.	clip placement	P.3.D.5.
80.	pre-op needle/wire localization	P.3.D.6.
81.	Provide post-care instructions for interventional procedures.	P.FOC
82.	Follow environmental protection standards for handling and disposing of biohazardous materials (e.g., sharps, blood, body fluids).	P.FOC