

**American College of Radiology
ACR Appropriateness Criteria®**

Imaging of the Axilla

Variant 1: Female. New palpable, unilateral, axillary lump. Initial imaging of the axilla.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
US axilla	Usually appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	9	9	0	0	0	0	0	0	1	0	14
		References		Study Quality											
		36 (26626499)		4											
		37 (29083988)		3											
Mammography diagnostic	May be appropriate	Expert Consensus	⊕⊕ 0.1-1mSv		4	4	1	0	6	4	3	1	0	1	0
Digital breast tomosynthesis diagnostic	May be appropriate	Strong	⊕⊕ 0.1-1mSv		4	4	1	1	4	3	4	2	0	1	0
		References		Study Quality											
		29 (28523569)		3											
		28 (25058084)		3											
		27 (23844366)		3											
		26 (23255766)		3											
		25 (23620367)		2											
		24 (23345348)		2											
MRI breast without and with IV contrast	Usually not appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	2	2	7	2	3	0	2	0	1	0	0
		References		Study Quality											
		35 (10894136)		1											

Variant 2: Female. New palpable, bilateral, axillary lump. Initial imaging of the axilla.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
US axilla	Usually appropriate	Limited	0 0 mSv	0 0 mSv [ped]	9	9	0	0	0	1	0	0	0	2	12
		References	Study Quality												
		20 (26847811)	3												
		37 (29083988)	3												
		41 (1503012)	4												
		40 (15344978)	4												
Mammography diagnostic	Usually not appropriate	Limited	⊗⊗ 0.1-1mSv		3	3	3	1	5	3	2	2	0	0	0
		References	Study Quality												
		7 (-3182246)	4												
		21 (-3194181)	4												
Digital breast tomosynthesis diagnostic	Usually not appropriate	Limited	⊗⊗ 0.1-1mSv		3	3	3	1	5	1	4	2	0	0	0
		References	Study Quality												
		32 (23890400)	3												
		21 (-3194181)	4												
		7 (-3182246)	4												
CT chest abdomen pelvis with IV contrast	Usually not appropriate	Expert Consensus	⊗⊗⊗⊗ 10-30 mSv	⊗⊗⊗⊗ 3-10 mSv [ped]	2	2	8	6	0	1	0	0	1	0	0
CT chest abdomen pelvis without IV contrast	Usually not appropriate	Expert Consensus	⊗⊗⊗⊗ 10-30 mSv	⊗⊗⊗⊗ 3-10 mSv [ped]	1	1	9	2	4	0	0	0	0	0	0

CT chest abdomen pelvis without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼☼ 10-30 mSv	☼☼☼☼☼ 10-30 mSv [ped]	1	1	12	2	1	1	0	0	0	0	0
MRI breast without IV contrast	Usually not appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	1	1	14	1	0	0	0	0	0	0	0
		References	Study Quality												
		39 (19822403)	4												
		35 (10894136)	1												
		34 (16244803)	2												
MRI breast without and with IV contrast	Usually not appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	1	1	9	1	1	1	2	0	1	0	0
		References	Study Quality												
		39 (19822403)	4												
		35 (10894136)	1												
		34 (16244803)	2												
FDG-PET/CT skull base to mid-thigh	Usually not appropriate	Limited	☼☼☼☼ 10-30 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	9	2	1	1	2	0	0	0	0
		References	Study Quality												
		38 (23002144)	4												
Sestamibi MBI	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv		1	1	14	0	1	0	0	0	0	0	0

Variant 3: Female. Newly diagnosed breast cancer, 2 cm or less, with clinical node-negative. Initial imaging of the axilla following diagnostic mammography or DBT.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
US axilla	May be appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	5	5	0	1	1	2	5	6	0	0	1
		References	Study Quality												
		54 (29279156)	3												

63 (25667099)	3
59 (25797740)	2
58 (24859939)	2
61 (28427743)	3
60 (27896640)	3
62 (21597359)	Good
57 (25205303)	3
56 (23628226)	2
55 (24074422)	3
5 (28898379)	1

MRI breast without and with IV contrast	Usually not appropriate	Limited	0 0 mSv	0 0 mSv [ped]	3	3	1	7	1	2	3	1	1	0	0
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References	Study Quality
53 (24687378)	3
52 (31885585)	4
51 (23359240)	4
50 (25727555)	4
48 (29516387)	4
7 (-3182246)	4

CT chest abdomen pelvis with IV contrast	Usually not appropriate	Moderate	☢☢☢☢ 10-30 mSv	☢☢☢☢ 3-10 mSv [ped]	1	1	11	4	0	1	0	0	0	0	0
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References	Study Quality
47 (28236777)	1
46 (31685110)	4
45 (30797241)	3
44 (28890415)	3
7 (-3182246)	4

CT chest abdomen pelvis without IV contrast	Usually not appropriate	Moderate	☢☢☢☢ 10-30 mSv	☢☢☢☢ 3-10 mSv [ped]	1	1	14	2	0	0	0	0	0	0	0
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References	Study Quality
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Sestamibi MBI	Usually not appropriate	Expert Consensus	⊕⊕⊕ 1-10 mSv		1	1	16	0	0	0	0	0	0	0	0
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Variant 4: Female. Newly diagnosed breast cancer, 2 cm or less, with clinical node-positive. Initial imaging of the axilla following diagnostic mammography or DBT.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
US axilla	Usually appropriate	Strong	0 0 mSv	0 0 mSv [ped]	9	9	0	0	0	0	0	0	1	2	13

References	Study Quality
54 (29279156)	3
83 (26711795)	1
58 (24859939)	2
86 (29972239)	Good
91 (27206399)	3
81 (18955508)	3
82 (16632729)	4
84 (23436877)	2
85 (22972506)	2
87 (29381381)	1
88 (23515655)	3
89 (24455284)	3
90 (23664535)	3
62 (21597359)	Good

MRI breast without and with IV contrast	May be appropriate (Disagreement)	Expert Opinion	0 0 mSv	0 0 mSv [ped]	5	5	1	6	2	0	5	0	2	0	0
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References	Study Quality
15 (24220324)	2
79 (27842679)	3
69 (28139203)	Good

80 (27161063)	Good
7 (-3182246)	4
48 (29516387)	4
52 (31885585)	4

CT chest abdomen pelvis with IV contrast	Usually not appropriate	Expert Consensus	⊗⊗⊗⊗ 10-30 mSv	⊗⊗⊗⊗ 3-10 mSv [ped]	2	2	7	7	1	1	0	0	0	0	0
FDG-PET/CT skull base to mid-thigh	Usually not appropriate	Strong	⊗⊗⊗⊗ 10-30 mSv	⊗⊗⊗⊗ 3-10 mSv [ped]	2	2	8	6	2	0	0	0	0	0	0

References	Study Quality
76 (30017264)	Good
77 (26537078)	3
73 (25298170)	4
71 (23672678)	2
70 (30504372)	2
67 (28984814)	2
75 (28208155)	3
69 (28139203)	Good
72 (27015862)	3
78 (27069160)	4
68 (26722071)	3
74 (26219608)	3
49 (20140703)	Good

CT chest abdomen pelvis without IV contrast	Usually not appropriate	Expert Consensus	⊗⊗⊗⊗ 10-30 mSv	⊗⊗⊗⊗ 3-10 mSv [ped]	1	1	13	3	0	0	0	0	0	0	0
CT chest abdomen pelvis without and with IV contrast	Usually not appropriate	Expert Consensus	⊗⊗⊗⊗ 10-30 mSv	⊗⊗⊗⊗ 10-30 mSv [ped]	1	1	11	4	1	0	0	0	0	0	0
MRI breast without IV contrast	Usually not appropriate	Moderate	○ 0 mSv	○ 0 mSv [ped]	1	1	14	2	0	0	0	0	0	0	0

References	Study Quality
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80 (27161063)	Good
7 (-3182246)	4
48 (29516387)	4
15 (24220324)	2
52 (31885585)	4
69 (28139203)	Good
79 (27842679)	3

Sestamibi MBI	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv		1	1	16	0	0	0	0	0	0	0	0
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Variant 5: Female. Newly diagnosed breast cancer, greater than 2 cm, with clinical node-negative. Initial imaging of the axilla following diagnostic mammography or DBT.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
US axilla	May be appropriate	Strong	0 0 mSv	0 0 mSv [ped]	6	6	0	0	0	1	3	6	1	2	3

References	Study Quality
54 (29279156)	3
63 (25667099)	3
59 (25797740)	2
58 (24859939)	2
61 (28427743)	3
60 (27896640)	3
5 (28898379)	1
6 (-3182230)	4
55 (24074422)	3
56 (23628226)	2
57 (25205303)	3
92 (26314782)	4
96 (24663048)	4

			47 (28236777)		1													
			14 (28161935)		3													
			7 (-3182246)		4													
			92 (26314782)		4													
MRI breast without IV contrast	Usually not appropriate	Moderate	○ 0 mSv	○ 0 mSv [ped]	1	1	14	1	0	0	1	0	0	0	0	0	0	0
			References				Study Quality											
			80 (27161063)				Good											
			7 (-3182246)				4											
			48 (29516387)				4											
			15 (24220324)				2											
			52 (31885585)				4											
			69 (28139203)				Good											
			79 (27842679)				3											
FDG-PET/CT skull base to mid-thigh	Usually not appropriate	Strong	⊗⊗⊗⊗ 10-30 mSv	⊗⊗⊗⊗ 3-10 mSv [ped]	1	1	9	5	1	1	0	0	0	0	0	0	0	
			References				Study Quality											
			7 (-3182246)				4											
			95 (27129866)				2											
			94 (25214641)				2											
			93 (14722036)				1											
Sestamibi MBI	Usually not appropriate	Expert Consensus	⊗⊗⊗ 1-10 mSv		1	1	16	0	0	0	0	0	0	0	0	0	0	

Variant 6: Female. Newly diagnosed breast cancer, greater than 2 cm, with clinical node-positive. Initial imaging of the axilla following diagnostic mammography or DBT (prior to treatment).

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations										
							1	2	3	4	5	6	7	8	9		
US axilla	Usually appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	9	9	0	0	0	0	0	0	1	2	13		

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations													
							1	2	3	4	5	6	7	8	9					

References	Study Quality
63 (25667099)	3
59 (25797740)	2
58 (24859939)	2
61 (28427743)	3
60 (27896640)	3
7 (-3182246)	4
92 (26314782)	4
105 (29705286)	1
104 (20047809)	3
103 (19933672)	3
62 (21597359)	Good
55 (24074422)	3
54 (29279156)	3

MRI breast without and with IV contrast	May be appropriate	Moderate	0 0 mSv	0 0 mSv [ped]	5	5	0	0	0	5	9	1	1	0	0
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References	Study Quality
15 (24220324)	2
69 (28139203)	Good
80 (27161063)	Good
7 (-3182246)	4
48 (29516387)	4
52 (31885585)	4
79 (27842679)	3

FDG-PET/CT skull base to mid-thigh	May be appropriate	Strong	☼☼☼☼ 10-30 mSv	☼☼☼☼ 3-10 mSv [ped]	5	5	1	1	1	2	9	2	0	0	0
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References	Study Quality
73 (25298170)	4
99 (29137072)	2
102 (23220901)	4
101 (22011459)	3
100 (21364034)	3
95 (27129866)	2
94 (25214641)	2
93 (14722036)	1
71 (23672678)	2

CT chest abdomen pelvis with IV contrast	May be appropriate	Strong	⊕⊕⊕⊕ 10-30 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	4	4	2	2	1	8	3	0	0	0	0
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References	Study Quality
47 (28236777)	1
14 (28161935)	3
7 (-3182246)	4
92 (26314782)	4
50 (25727555)	4
51 (23359240)	4
95 (27129866)	2

CT chest abdomen pelvis without and with IV contrast	Usually not appropriate	Strong	⊕⊕⊕⊕ 10-30 mSv	⊕⊕⊕⊕⊕ 10-30 mSv [ped]	2	2	7	8	1	0	0	0	0	0	0
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References	Study Quality
47 (28236777)	1
14 (28161935)	3
7 (-3182246)	4
92 (26314782)	4
95 (27129866)	2
50 (25727555)	4
51 (23359240)	4

CT chest abdomen pelvis without IV contrast	Usually not appropriate	Strong	☼☼☼☼ 10-30 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	14	2	0	0	0	0	0	0	0	0
		References	Study Quality													
		47 (28236777)	1													
		14 (28161935)	3													
		7 (-3182246)	4													
		92 (26314782)	4													
		98 (25846421)	3													
		50 (25727555)	4													
		51 (23359240)	4													
		95 (27129866)	2													
MRI breast without IV contrast	Usually not appropriate	Moderate	○ 0 mSv	○ 0 mSv [ped]	1	1	15	1	0	0	0	0	0	0	0	0
		References	Study Quality													
		80 (27161063)	Good													
		7 (-3182246)	4													
		48 (29516387)	4													
		15 (24220324)	2													
		52 (31885585)	4													
		69 (28139203)	Good													
		79 (27842679)	3													
Sestamibi MBI	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv		1	1	16	0	0	0	0	0	0	0	0	0

Variant 7: Female. Breast cancer, greater than 2 cm in size, at mid-treatment of neoadjuvant chemotherapy, with initial clinical node-negative disease but now presenting with new palpable axillary lump. Imaging of the axilla at mid-treatment.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
US axilla	Usually appropriate	Moderate	○ 0 mSv	○ 0 mSv [ped]	9	9	0	0	0	0	0	0	1	2	12

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations												
							1	2	3	4	5	6	7	8	9				
		References		Study Quality															
		86 (29972239)		Good															
		109 (28314842)		2															
MRI breast without and with IV contrast	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	3	3	4	4	5	0	2	1	0	0	0				
Digital breast tomosynthesis diagnostic	Usually not appropriate	Expert Consensus	⊕⊕ 0.1-1mSv		3	3	4	3	5	1	0	0	2	0	0				
CT chest abdomen pelvis with IV contrast	Usually not appropriate	Limited	⊕⊕⊕⊕ 10-30 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	2	2	6	5	0	3	0	0	1	0	0				
		References		Study Quality															
		108 (28267534)		2															
CT chest abdomen pelvis without and with IV contrast	Usually not appropriate	Limited	⊕⊕⊕⊕ 10-30 mSv	⊕⊕⊕⊕⊕ 10-30 mSv [ped]	2	2	5	7	1	1	0	0	1	0	0				
		References		Study Quality															
		108 (28267534)		2															
Mammography diagnostic	Usually not appropriate	Expert Consensus	⊕⊕ 0.1-1mSv		2	2	4	4	4	1	0	0	2	0	0				
CT chest abdomen pelvis without IV contrast	Usually not appropriate	Limited	⊕⊕⊕⊕ 10-30 mSv	⊕⊕⊕⊕⊕ 3-10 mSv [ped]	1	1	12	1	1	1	0	0	0	0	0				
		References		Study Quality															
		108 (28267534)		2															
MRI breast without IV contrast	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	1	1	11	2	1	0	1	0	0	0	0				

FDG-PET/CT skull base to mid-thigh	Usually not appropriate	Expert Consensus	☼☼☼☼ 10-30 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	9	3	2	0	0	0	1	0	0
Sestamibi MBI	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv		1	1	15	0	0	0	0	0	0	0	0

Variant 8: Female. Breast cancer, greater than 2 cm in size, clinical node-negative. Imaging of the axilla after completion of neoadjuvant chemotherapy.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
MRI breast without and with IV contrast	May be appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	5	5	2	1	3	1	8	0	1	0	0
		References		Study Quality											
			121 (27451892)		2										
			112 (30048319)		3										
			128 (31956542)		2										
			127 (20224378)		3										
			126 (21947592)		3										
			125 (30152746)		4										
			124 (23297042)		Inadequate										
			123 (29877048)		Good										
			122 (20143266)		2										
US axilla	May be appropriate (Disagreement)	Expert Opinion	○ 0 mSv	○ 0 mSv [ped]	5	5	1	1	1	2	7	2	1	1	0
		References		Study Quality											
			7 (-3182246)		4										
			130 (19345896)		Good										
			129 (25646192)		3										
Mammography diagnostic	Usually not appropriate	Expert Consensus	☼☼ 0.1-1mSv		2	2	7	1	4	0	1	1	1	0	0

Digital breast tomosynthesis diagnostic	Usually not appropriate	Limited	☹☹ 0.1-1mSv		2	2	7	1	4	0	2	0	0	0	1
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References	Study Quality
113 (30396666)	3

CT chest abdomen pelvis with IV contrast	Usually not appropriate	Expert Consensus	☹☹☹☹ 10-30 mSv	☹☹☹☹ 3-10 mSv [ped]	1	1	12	1	2	0	0	0	0	0
CT chest abdomen pelvis without IV contrast	Usually not appropriate	Expert Consensus	☹☹☹☹ 10-30 mSv	☹☹☹☹ 3-10 mSv [ped]	1	1	14	0	1	0	0	0	0	0
CT chest abdomen pelvis without and with IV contrast	Usually not appropriate	Expert Consensus	☹☹☹☹ 10-30 mSv	☹☹☹☹ 10-30 mSv [ped]	1	1	10	2	3	0	0	0	0	0
MRI breast without IV contrast	Usually not appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	1	1	11	0	3	0	1	0	0	0

References	Study Quality
128 (31956542)	2
127 (20224378)	3
126 (21947592)	3
125 (30152746)	4
124 (23297042)	Inadequate
123 (29877048)	Good
122 (20143266)	2
121 (27451892)	2
112 (30048319)	3

FDG-PET/CT skull base to mid-thigh	Usually not appropriate	Moderate	☹☹☹☹ 10-30 mSv	☹☹☹☹ 3-10 mSv [ped]	1	1	8	3	4	0	0	0	0	0
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References	Study Quality
120 (31826976)	2
119 (30714256)	3
118 (21960111)	Good
117 (28477166)	Good

116 (23714689)	Good
115 (26981529)	Good
114 (22734080)	Inadequate
112 (30048319)	3

Sestamibi MBI	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv		1	1	15	0	0	0	0	0	0	0	0	0
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Variant 9: Female. Breast cancer, greater than 2 cm in size, clinical node-positive. Imaging of the axilla after completion of neoadjuvant chemotherapy and prior to surgery.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
US axilla	Usually appropriate	Strong	0 0 mSv	0 0 mSv [ped]	8	8	0	1	0	0	1	1	2	3	7

References	Study Quality
142 (25891674)	4
8 (26811528)	2
143 (23846781)	3
141 (27411945)	3
140 (30366878)	4
139 (28704697)	3
88 (23515655)	3
87 (29381381)	1
10 (26649589)	3
138 (31897672)	4

MRI breast without and with IV contrast	May be appropriate	Strong	0 0 mSv	0 0 mSv [ped]	5	5	0	1	1	5	7	1	1	0	0
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References	Study Quality
121 (27451892)	2
112 (30048319)	3
124 (23297042)	Inadequate

CT chest abdomen pelvis with IV contrast	Usually not appropriate	Limited	☼☼☼☼ 10-30 mSv	☼☼☼☼☼ 3-10 mSv [ped]	2	2	8	4	1	1	1	1	0	0	0
		References	Study Quality												
		7 (-3182246)	4												
		92 (26314782)	4												
		154 (31558898)	4												
CT chest abdomen pelvis without and with IV contrast	Usually not appropriate	Limited	☼☼☼☼ 10-30 mSv	☼☼☼☼☼ 10-30 mSv [ped]	2	2	8	5	2	1	0	0	0	0	0
		References	Study Quality												
		7 (-3182246)	4												
		92 (26314782)	4												
		154 (31558898)	4												
CT chest abdomen pelvis without IV contrast	Usually not appropriate	Limited	☼☼☼☼ 10-30 mSv	☼☼☼☼☼ 3-10 mSv [ped]	1	1	13	1	1	0	0	0	1	0	0
		References	Study Quality												
		7 (-3182246)	4												
		92 (26314782)	4												
		154 (31558898)	4												
MRI breast without IV contrast	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	1	1	14	2	0	0	0	0	0	0	0
		References	Study Quality												
		157 (31161975)	4												
		156 (26744477)	3												
		158 (27902592)	3												
Sestamibi MBI	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv		1	1	16	0	0	0	0	0	0	0	0

Variant 11: Female. Suspicious axillary node on mammography or ultrasound. Next imaging study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
US-guided core biopsy axillary node	Usually appropriate	Limited	0 0 mSv	0 0 mSv [ped]	9	9	0	0	0	0	0	0	1	4	10
		References	Study Quality												
		86 (29972239)	Good												
US-guided fine needle aspiration biopsy axillary node	Usually appropriate	Limited	0 0 mSv	0 0 mSv [ped]	8	8	0	0	0	0	1	0	3	4	7
		References	Study Quality												
		63 (25667099)	3												
		62 (21597359)	Good												
MRI breast without and with IV contrast	May be appropriate (Disagreement)	Expert Opinion	0 0 mSv	0 0 mSv [ped]	5	5	4	3	3	0	3	2	1	0	0
		References	Study Quality												
		123 (29877048)	Good												
		39 (19822403)	4												
		35 (10894136)	1												
		34 (16244803)	2												
FDG-PET/CT skull base to mid-thigh	Usually not appropriate	Moderate	⊕⊕⊕⊕ 10-30 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	3	3	6	1	3	1	3	1	0	0	0
		References	Study Quality												
		160 (22474203)	2												
		159 (12355001)	4												
		39 (19822403)	4												
		33 (27813620)	4												
		32 (23890400)	3												
		31 (19771506)	Good												
CT chest abdomen pelvis with IV contrast	Usually not appropriate	Moderate	⊕⊕⊕⊕ 10-30 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	2	2	7	3	2	1	1	1	0	0	0
		References	Study Quality												

			47 (28236777)		1													
CT chest abdomen pelvis without IV contrast	Usually not appropriate	Moderate	⊕⊕⊕⊕ 10-30 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	1	1	11	2	1	0	1	0	0	0	0	0	0	0
			References		Study Quality													
			47 (28236777)		1													
CT chest abdomen pelvis without and with IV contrast	Usually not appropriate	Moderate	⊕⊕⊕⊕ 10-30 mSv	⊕⊕⊕⊕⊕ 10-30 mSv [ped]	1	1	8	3	3	0	1	0	0	0	0	0	0	0
			References		Study Quality													
			47 (28236777)		1													
MRI breast without IV contrast	Usually not appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	1	1	11	2	1	0	1	0	0	0	0	0	0	0
			References		Study Quality													
			123 (29877048)		Good													
			39 (19822403)		4													
			35 (10894136)		1													
			34 (16244803)		2													
Sestamibi MBI	Usually not appropriate	Expert Consensus	⊕⊕⊕ 1-10 mSv		1	1	14	0	0	1	0	0	0	0	0	0	0	0

Variant 12: Female. Suspicious axillary node on any other imaging modality (excluding mammography and ultrasound). Next imaging study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations												
							1	2	3	4	5	6	7	8	9				
Digital breast tomosynthesis diagnostic	Usually appropriate	Limited	⊕⊕ 0.1-1mSv		9	9	0	0	0	0	1	0	2	4	8				
			References		Study Quality														
			161 (28710582)		2														
US axilla	Usually appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	9	9	0	0	0	0	1	0	3	2	9				

References	Study Quality
54 (29279156)	3
55 (24074422)	3
58 (24859939)	2
62 (21597359)	Good
83 (26711795)	1
84 (23436877)	2
85 (22972506)	2
87 (29381381)	1
88 (23515655)	3
89 (24455284)	3
90 (23664535)	3
103 (19933672)	3
104 (20047809)	3

Mammography diagnostic	Usually appropriate	Limited	☼☼ 0.1-1mSv		8	8	0	0	0	0	1	1	3	4	6
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References	Study Quality
162 (2227922)	3

US-guided fine needle aspiration biopsy axillary node	May be appropriate	Moderate	○ 0 mSv	○ 0 mSv [ped]	5	5	0	0	1	1	7	5	1	1	0
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References	Study Quality
86 (29972239)	Good
165 (12618878)	3
164 (12736105)	3
163 (17033920)	2

US-guided core biopsy axillary node	May be appropriate (Disagreement)	Expert Opinion	○ 0 mSv	○ 0 mSv [ped]	5	5	0	0	1	2	5	5	1	0	2
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References	Study Quality
86 (29972239)	Good
63 (25667099)	3
62 (21597359)	Good

61 (28427743)	3
60 (27896640)	3
59 (25797740)	2

Appendix Key

A more complete discussion of the items presented below can be found by accessing the supporting documents at the designated hyperlinks.

Appropriateness Category: The panel's recommendation for a procedure based on the assessment of the risks and benefits of performing the procedure for the specified clinical scenario.

SOE: Strength of Evidence. The assessment of the amount and quality of evidence found in the peer reviewed medical literature for an appropriateness recommendation.

- **References:** The citation number and PMID for the reference(s) associated with the recommendation.
- **Study Quality:** The assessment of the quality of an individual reference based on the number of study quality elements described in the reference.

RRL: Relative Radiation Level. A population based assessment of the amount of radiation a typical patient may be exposed to during the specified procedure.

Rating: The final rating (1-9 scale) for the procedure as determined by the panel during rating rounds.

Median: The median rating (1-9 scale) for the procedure as determined by the panel during rating rounds.

Final tabulations: A histogram showing the number of panel members who rated the procedure as noted in the column heading (ie, 1, 2, 3, etc.).

Additional supporting documents about the AC methodology and processes can be found at www.acr.org/ac.