American College of Radiology ACR Appropriateness Criteria®

Supplemental Breast Cancer Screening Based on Breast Density

Variant 1: Adult female. Supplemental breast cancer screening. Average risk. Nondense breasts.

	Appropri	iateness	207		_]	Final	Tab	ulatio	ns		
Procedure	Categ	gory	SOE	Adults RR	L	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
Digital breast tomosynthesis screening	Usua approp	ally oriate	Limited	�� 0.1-1m	ıSv		9	9	1	1	0	0	0	0	4	2	10
			References			Study	Quality										
			2 (-3100780)				4										
			12 (30107542)			C	Good										
			9 (30816931)				3										
			3 (31063080)				3										
			10 (35352019)			C	Good										
			13 (37249433)				3										
			4 (2858707)				3										
	1		11 (31084476)				4				_						
US breast	Usually approp	y not oriate	Limited	O 0 mSv	,	O 0 mSv [ped]	3	3	4	4	5	4	0	0	1	0	0
			References			Study	Quality										
			20 (32903054)				4										
			17 (36719288)			C	Good										
			7 (37150275)				4										
			18 (36999589)				4										
			19 (33032820)			C	Good										

MRI breast without and with IV contrast	Usuall: approp	Moderate	O 0 mSv	O 0 mSv [ped]	2	2	7	4	4	0	1	1	0	1	0
		References		Study	Quality										
		16 (28221097)			1										
Mammography with IV contrast	Usuall approp	Limited	�� 0.1-1mS	Sv	2	2	8	2	6	0	0	1	0	1	0
		References		Study	Quality										
		14 (27097789)			3										
		15 (36108478)			4										
MRI breast without IV contrast	Usuall approp	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	15	2	0	0	0	0	0	0	1
FDG-PET breast dedicated	Usuall approp	Expert Consensus	Consensus Expert		1	1	17	0	0	0	0	0	0	0	1
Sestamibi MBI	Usuall: approp	Expert Consensus	��� 1-10 mSv		1	1	17	0	0	0	0	0	0	0	1
MRI breast without and with IV contrast abbreviated	Usuall: approp	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	10	3	2	0	2	0	1	0	0
MRI breast without IV contrast abbreviated	Usuall: approp	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	16	1	0	0	0	0	0	1	0

Variant 2: Adult female. Supplemental breast cancer screening. Average risk. Heterogeneously dense breasts.

D 1	Appropriateness	COE	A L L DDI	n i nni	D 41	3.6.11			F	inal '	Гаbu	latio	ns		
Procedure	Category	SOE	Adults RRL	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
Digital breast tomosynthesis screening	Usually appropriate	Limited	�� 0.1-1mSv		9	9	0	0	0	0	0	0	1	0	16

References	Study Quality
2 (-3100780)	4
12 (30107542)	Good
20 (32903054)	4

3 (31063080) 3 17 (36719288) Good Good								1								
17 (36719288) Good 10 (35352019) Good 13 (37249433) 3 3 4 (2858707) 3 3 3 11 (31084476) 4			9 (30816931)			3		_								
10 (35352019) Good 13 (37249433) 3 4 (2858707) 3 5 5 0 0 0 0 13 2 2 0 0			` ` `					1								
13 (37249433) 3 4 (2858707) 3 3 1 (31084476) 4								1								
MRI breast without and with IV May be appropriate Moderate O 0 mSv O 0 mSv					C			1								
MRI breast without and with IV May be appropriate Moderate O 0 mSv O 0 mSv Eped 5 5 0 0 0 0 13 2 2 0 0			13 (37249433)			3		_								
MRI breast without and with IV contrast Moderate O 0 mSv O 0 mSv Eped 5 5 0 0 0 0 13 2 2 0 0			4 (2858707)			3		_								
References Study Quality 16 (28221097) 1 17 (36719288) Good			11 (31084476)		<u> </u>	4							1			
16 (28221097)			Moderate	O 0 mSv		5	5	0	0	0	0	13	2	2	0	0
US breast			References		Study	Quality										
US breast			16 (28221097)		•	1										
References Study Quality 34 (26547101) 2 2 2 2 35 (30316869) 1 17 (36719288) Good 7 (37150275) 4 18 (36999589) 4 19 (33032820) Good MRI breast without and with IV May be Strong O 0 mSy 5 5 0 0 0 1 12 2 2 0 0 0 1 13 2 2 0 0 0 0 1 13 2 2 2 0 0 0 0 0 0 0			17 (36719288)		G	Good										
34 (26547101) 2 20 (32903054) 4 33 (34406400) 2 35 (30316869) 1 17 (36719288) Good 7 (37150275) 4 18 (36999589) 4 19 (33032820) Good MRI breast without and with IV May be Strong O 0 mSv 5 5 0 0 0 0 1 12 2 2 2 0 0 0	US breast		Strong	O 0 mSv		5	5	0	0	0	1	11	4	1	0	0
34 (26547101) 2 20 (32903054) 4 33 (34406400) 2 35 (30316869) 1 17 (36719288) Good 7 (37150275) 4 18 (36999589) 4 19 (33032820) Good MRI breast without and with IV May be Strong O 0 mSv 5 5 0 0 0 0 1 12 2 2 2 0 0 0			References		Study	Quality	•		•		•		•		•	
33 (34406400) 2 35 (30316869) 1 17 (36719288) Good 7 (37150275) 4 18 (36999589) 4 19 (33032820) Good MRI breast without and with IV May be Strong O 0 mSv 5 5 0 0 0 0 1 12 2 2 2 0 0			34 (26547101)		•	_		1								
35 (30316869) 1 17 (36719288) Good 7 (37150275) 4 18 (36999589) 4 19 (33032820) Good MRI breast without and with IV May be Strong O 0 mSv 5 5 0 0 0 0 1 13 2 2 2 0 0			20 (32903054)			4										
17 (36719288) Good			33 (34406400)			2										
7 (37150275) 4 18 (36999589) 4 19 (33032820) Good MRI breast without and with IV May be Strong O 0 mSv 5 5 0 0 0 1 12 2 2 2 0 0			35 (30316869)			1										
18 (36999589) 4 19 (33032820) Good MRI breast without and with IV May be Strong O 0 mSv 5 5 0 0 0 1 12 2 2 2 0 0			17 (36719288)		C	Good										
19 (33032820) Good			7 (37150275)			4										
MRI breast without and with IV May be Strong O 0 mSv 5 5 0 0 0 1 12 2 2 0 0			18 (36999589)			4										
Strong OlmSy 5 5 0 0 1 12 2 2 0 0			19 (33032820)		C	ood					_					
contrast appropriate appropriate [ped] 5 5 6 6 7 7 7 7 7 7 7 7	MRI breast without and with IV contrast abbreviated	May be appropriate	Strong	O 0 mSv	O 0 mSv [ped]	5	5	0	0	0	1	12	2	2	0	0
References Study Quality			References		Study	Quality	•									
27 (28749202) 4																
25 (26152500) 2			25 (26152500)			2										
24 (24958821) 2						2]								
28 (32096852)						1										
29 (32931396)			29 (32931396)			2										

			26 (30887736)				4										
			23 (37581498)				3										
			19 (33032820)			C	Good										
Mammography with IV contrast	Usuall approp		Strong	�� 0.1-1m	nSv		2	2	8	4	5	0	0	0	0	0	0
			References			Study	Quality										
			21 (30240292)				2										
			14 (27097789)				3										
			22 (31453765)				2										
			15 (36108478)				4										
MRI breast without IV contrast	Usuall approp		Expert Consensus	O 0 mSv	,	O 0 mSv [ped]	1	1	14	3	0	0	0	1	0	0	0
FDG-PET breast dedicated	Usuall approp	y not oriate	Expert Consensus	��� 1-10 mSv	0		1	1	15	1	1	0	0	0	0	0	1
Sestamibi MBI	Usuall approp		Limited	��� 1-10 mSv	0		1	1	12	2	1	1	1	0	0	1	0
			References			Study	Quality										
			31 (25615744)				1										
			32 (27186635)				3										
			7 (37150275)				4										
			30 (34887334)				4										
MRI breast without IV contrast abbreviated	Usuall approp		Expert Consensus	O 0 mSv	,	O 0 mSv [ped]	1	1	15	2	0	0	0	0	1	0	0

Variant 3: Adult female. Supplemental breast cancer screening. Average risk. Extremely dense breasts.

D 1	Appropriateness	COF	A L L DDI	D I DDI	D 41	N. T. 11			F	inal '	Гаbu	latio	ns		
Procedure	Category	SOE	Adults RRL	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
Digital breast tomosynthesis screening	Usually appropriate	Limited	�� 0.1-1mSv		9	9	0	0	1	0	0	0	0	1	15

		References		Study	Quality]								
		2 (-3100780)			4										
		12 (30107542)		C	Good		1								
		20 (32903054)			4										
		9 (30816931)			3										
		3 (31063080)			3										
		17 (36719288)			Good										
		10 (35352019)		C	Good										
		13 (37249433)			3										
		4 (2858707)			3										
		11 (31084476)			4										
MRI breast without and with IV contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	7	7	0	0	0	0	0	2	8	5	2
		References		Study	Quality										
		36 (31774954)			Good										
		37 (33724062)			3										
		38 (18389253)			4										
MRI breast without and with IV contrast abbreviated	Usually appropriate	Strong	O 0 mSv	O 0 mSv [ped]	7	7	0	0	0	0	0	1	10	4	2
		References		Study	Quality										
		27 (28749202)			4										
		25 (26152500)			2										
		24 (24958821)			2										
		28 (32096852)			1										
		29 (32931396)			2										
		26 (30887736)			4										
		23 (37581498)			3										
		19 (33032820)			Good										
US breast	May be appropriate	Strong	O 0 mSv	O 0 mSv [ped]	5	5	0	0	0	1	8	4	4	0	0
		References		Study	Quality										

			34 (26547101)				2										
			20 (32903054)				4										
			33 (34406400)				2										
			35 (30316869)				1										
			17 (36719288)			G	lood										
			7 (37150275)				4										
			18 (36999589)				4										
			19 (33032820)			G	ood										
Mammography with IV contrast	Usually approp		Strong	�� 0.1-1mS	Sv		2	2	6	3	6	1	1	0	0	0	0
			References			Study	Quality										
			21 (30240292)				2										
			14 (27097789)				3										
			22 (31453765)				2										
			15 (36108478)				4										
MRI breast without IV contrast	Usually approp		Expert Consensus	O 0 mSv		O 0 mSv [ped]	1	1	16	1	0	0	0	0	1	0	0
FDG-PET breast dedicated	Usually approp		Expert Consensus	��� 1-10 mSv			1	1	16	1	0	0	0	0	0	1	0
Sestamibi MBI	Usually approp	y not riate	Limited	��� 1-10 mSv			1	1	12	3	1	1	0	0	0	1	0
			References			Study	Quality		'					!		!	
			31 (25615744)				1										
			32 (27186635)				3										
			7 (37150275)				4										
			30 (34887334)				4										
MRI breast without IV contrast abbreviated	Usually approp		Expert Consensus	O 0 mSv		O 0 mSv [ped]	1	1	15	2	0	0	0	0	1	0	0

Variant 4: Adult female. Supplemental breast cancer screening. Intermediate risk. Nondense breasts.

	Appropriateness	GOT		D 1 DD1	.	3.5.11			F	inal	Tabu	latio	ns		
Procedure	Category	SOE	Adults RRL	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
Digital breast tomosynthesis screening	Usually appropriate	Limited	�� 0.1-1mSv		9	9	1	1	0	0	0	0	4	3	9
		References		Study	Quality								•	•	
		2 (-3100780)			4										
		12 (30107542)		(Good										
		9 (30816931)			3										
		3 (31063080)			3										
		10 (35352019)			Good										
		13 (37249433)			3										
		4 (2858707)			3										
		11 (31084476)		1	4			I	1	1		I		_	
MRI breast without and with IV contrast	May be appropriate (Disagreement)	Expert Opinion	O 0 mSv	O 0 mSv [ped]	5	5	0	0	0	5	0	1	9	0	2
		References		Study	Quality										
		3 (31063080)			3										
		39 (35783682)			4										
MRI breast without and with IV contrast abbreviated	May be appropriate	Strong	O 0 mSv	O 0 mSv [ped]	5	5	0	0	0	6	8	1	2	0	0
		References		Study	Quality										
		27 (28749202)			4										
		25 (26152500)			2										
		24 (24958821)			2										
		28 (32096852)			1										
		26 (30887736)			4										
		23 (37581498)			3			1	1	1	1	1	1		
US breast	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	3	3	5	3	5	1	2	0	1	0	1

								1									
			References			Study	Quality										
			20 (32903054)				4										
			17 (36719288)			G	Good										
			7 (37150275)				4										
			18 (36999589)				4										
			19 (33032820)			G	Good										
Mammography with IV contrast	Usuall approp		Strong	�� 0.1-1m	ıSv		3	3	5	2	5	1	2	2	0	0	0
			References			Study	Quality										
			21 (30240292)		_	2											
			14 (27097789)				3										
						2											
			22 (31453765) 41 (33787291)				3										
			15 (36108478)	İ			4										
MRI breast without IV contrast	Usuall approp		Expert Consensus	O 0 mSv	,	O 0 mSv [ped]	1	1	16	1	0	0	0	1	0	0	0
FDG-PET breast dedicated	Usuall approp	y not oriate	Expert Consensus	��� 1-10 mSv	0		1	1	16	1	0	0	0	0	1	0	0
Sestamibi MBI	Usuall approp		Expert Consensus	��� 1-10 mSv	0		1	1	17	0	0	0	0	0	0	1	0
MRI breast without IV contrast abbreviated	Usuall approp		Expert Consensus	O 0 mSv	,	O 0 mSv [ped]	1	1	16	1	0	0	0	0	1	0	0

Variant 5: Adult female. Supplemental breast cancer screening. Intermediate risk. Heterogeneously dense breasts.

n 1	Appropri	ateness	COF	4 1 14 DE	\T	D I DDI	D 41	3.6.11			F	inal '	Гаbu	latio	ns		
Procedure	Categ		SOE	Adults RF	KL	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
Digital breast tomosynthesis screening	Usua approp		Limited	�� 0.1-1n	nSv		9	9	0	0	0	0	0	0	0	1	16
			References			Study	Quality										

		2 (-3100780)			4										
		12 (30107542)		C	Good										
		20 (32903054)			4										
		9 (30816931)			3										
		3 (31063080)			3										
		17 (36719288)			Good										
		10 (35352019)		C	Good										
		13 (37249433)			3										
		4 (2858707)			3										
		11 (31084476)			4										
MRI breast without and with IV contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	7	7	0	0	0	0	1	0	10	4	2
		References		Study	Quality										
		3 (31063080)			3										
		17 (36719288)		C	Good										
		7 (37150275)			4										
MRI breast without and with IV contrast abbreviated	Usually appropriate	Strong	O 0 mSv	O 0 mSv [ped]	7	7	0	0	0	0	1	0	10	4	2
		References		Study	Quality										
		27 (28749202)			4										
		25 (26152500)			2										
		24 (24958821)			2										
		28 (32096852)			1										
		29 (32931396)			2										
		26 (30887736)			4										
		23 (37581498)			3										
		19 (33032820)		C	ood					1					
US breast	May be appropriate	Strong	O 0 mSv	O 0 mSv [ped]	5	5	0	0	0	0	13	2	2	0	0
		References		Study											
		34 (26547101)			2										

		22 (2202227)														
			20 (32903054)			4										
			33 (34406400)			2										
			35 (30316869)			1										
			17 (36719288)		(Good										
			7 (37150275)			4										
			18 (36999589)			4										
	1		19 (33032820)		(Good										
Mammography with IV contrast	May approp		Strong	�� 0.1-1mS	Sv	5	5	0	0	0	0	12	4	1	0	0
			References		Study	Quality		•						•	•	
			21 (30240292)			2										
			14 (27097789)		3											
		22 (31453765) 2														
			15 (36108478)		4											
MRI breast without IV contrast	Usually approp		Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	15	2	0	1	0	0	0	0	0
FDG-PET breast dedicated	Usually approp		Expert Consensus	��� 1-10 mSv)	1	1	16	1	0	0	0	1	0	0	0
Sestamibi MBI	Usually approp		Limited	��� 1-10 mSv)	1	1	13	1	1	2	0	0	1	0	0
			References		Study Quality											
			31 (25615744)			1										
			32 (27186635)			3										
			7 (37150275)			4										
,			30 (34887334)			4										
MRI breast without IV contrast abbreviated	Usually approp		Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	15	2	0	1	0	0	0	0	0

Variant 6: Adult female. Supplemental breast cancer screening. Intermediate risk. Extremely dense breasts.

ъ.	Appropriateness	go.	4.1.1. 557	D 1 557	D .:	3.5 31			F	inal '	Tabu	latio	ns		
Procedure	Category	SOE	Adults RRL	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
Digital breast tomosynthesis screening	Usually appropriate	Limited	�� 0.1-1mSv		9	9	0	0	0	0	0	0	0	2	15
		References		Study	Quality					•					
		2 (-3100780)			4										
		12 (30107542)		(Good										
		20 (32903054)			4										
		9 (30816931)			3										
		3 (31063080)			3										
		17 (36719288)			Good										
		10 (35352019)	, and the second												
		13 (37249433)		3 3											
		4 (2858707)													
		11 (31084476)			4			I			1	I	1	1	_
MRI breast without and with IV contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	7	7	0	0	2	0	3	0	6	4	3
		References		Study	/ Quality										
		36 (31774954)	1		Good										
		37 (33724062)			3										
		38 (18389253)		1	4			1		I	1	1			_
MRI breast without and with IV contrast abbreviated	Usually appropriate	Strong	O 0 mSv	O 0 mSv [ped]	7	7	0	0	0	0	1	0	11	2	3
		References		Study	Quality										
		25 (26152500)			2										
		24 (24958821)			2										
		28 (32096852)	1		1										
		29 (32931396)			2										
		26 (30887736)			4										
		23 (37581498)			3										
		19 (33032820)			Good										

Mammography with IV contrast	May be appropriate	Strong	�� 0.1-1mS	v	6	6	0	0	0	0	7	9	1	0	0
		References		Study	y Quality		•	•	•	•					
		21 (30240292)			2										
		14 (27097789))		3										
		22 (31453765))		2										
		41 (33787291))		3										
		15 (36108478)			4										
US breast	May be appropriate	Strong	O 0 mSv	O 0 mSv [ped]	5	5	0	0	0	0	14	2	1	0	0
		References		Study	y Quality		•								
		34 (26547101))		2										
		20 (32903054))		4										
		33 (34406400))		2										
		35 (30316869))		1										
		17 (36719288))	(Good										
		7 (37150275)			4										
		18 (36999589))		4										
		19 (33032820)		(_								
MRI breast without IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	16	1	0	1	0	0	0	0	0
FDG-PET breast dedicated	Usually not appropriate	Expert Consensus	��� 1-10 mSv		1	1	17	0	0	0	1	0	0	0	0
Sestamibi MBI	Usually not appropriate	Limited	��� 1-10 mSv		1	1	13	0	2	2	0	0	1	0	0
		References		Study	y Quality		•								
		31 (25615744))		1										
		32 (27186635)			3										
		7 (37150275)			4										
		30 (34887334)			4										

MRI breast without IV contrast abbreviated	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	16	1	0	1	0	0	0	0	0
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Variant 7: Adult female. Supplemental breast cancer screening. High risk. Nondense or dense breasts.

Procedure	Appropriatene	SS GOT		D 1 DD1	- ·	3.5.11			F	inal	Tabu	latio	ns		
Procedure	Category	SOE SOE	Adults RRL	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
MRI breast without and with IV contrast	Usually appropriate	Moderate	O 0 mSv	O 0 mSv [ped]	9	9	1	1	0	0	0	0	3	3	10
		References		Study	Quality										
		5 (30255244)			4										
		42 (21139507)			1										
		3 (31063080)			3			_	_	_				_	
Digital breast tomosynthesis screening	Usually appropriate	Limited	�� 0.1-1mS	SV	9	9	0	0	0	0	0	0	0	1	16
		References		Study Quality 4											
		2 (-3100780)			4										
		12 (30107542))	C	Good										
		20 (32903054))		4										
		9 (30816931)			3										
		3 (31063080)			3										
		17 (36719288)	1	C	Good										
		10 (35352019)	1	C	Good										
		13 (37249433))		3										
		4 (2858707)		3											
		11 (31084476)	11 (31084476)		4										
MRI breast without and with IV contrast abbreviated	Usually appropriate	Strong	O 0 mSv	O 0 mSv [ped]	7	7	0	0	0	0	6	1	2	6	2
		References		Study	Quality										
		43 (26521970))		4										

	25 (26152500)			2										
	24 (24958821)			2										
	26 (30887736)	ı		4										
	23 (37581498)			3										
	19 (33032820)			Good										
May be appropriate	Strong	O 0 mSv	O 0 mSv [ped]	5	5	0	0	0	0	10	0	5	2	0
	References		Study	Quality		•			•					
	34 (26547101)			2										
	20 (32903054)			4										
	33 (34406400)			2										
	35 (30316869)			1										
	17 (36719288)			Good										
	7 (37150275)			4										
	18 (36999589)			4										
	19 (33032820)		Good											
May be appropriate				5	5	0	0	0	0	13	3	1	0	0
	References		Study Quality							•	•			
	21 (30240292)			2										
	14 (27097789)			3										
	22 (31453765)			2										
	15 (36108478)			4										
	23 (37581498)			3										
Usually not appropriate	Expert Consensus O 0 mSv		O 0 mSv [ped]	1	1	15	1	1	1	0	0	0	0	0
Usually not appropriate	Expert			1	1	16	1	0	1	0	0	0	0	0
		000440												
Usually not appropriate	Limited	��� 1-10 mSv		1	1	12	0	3	1	1	0	1	0	0
	May be appropriate Usually not appropriate Usually not	24 (24958821) 26 (30887736) 23 (37581498) 19 (33032820) May be appropriate	References 34 (26547101) 20 (32903054) 33 (34406400) 35 (30316869) 17 (36719288) 7 (37150275) 18 (36999589) 19 (33032820)	24 (24958821) 26 (30887736) 23 (37581498) 19 (33032820) O 0 mSv May be appropriate Strong O 0 mSv References Study 34 (26547101) 20 (32903054) 33 (34406400) 35 (30316869) 17 (36719288) C 7 (37150275) 18 (36999589) 19 (33032820) C May be appropriate Strong Strong References Study 21 (30240292) 14 (27097789) 22 (31453765) 15 (36108478) 23 (37581498) O 0 mSv [ped] Usually not appropriate Expert Consensus O 0 mSv [ped]	24 (24958821) 2 26 (30887736) 4 23 (37581498) 3 19 (33032820) Good May be appropriate Strong O 0 mSv [ped] 5 References Study Quality 34 (26547101) 2 2 20 (32903054) 4 4 33 (34406400) 2 2 35 (30316869) 1 1 17 (36719288) Good 7 7 (37150275) 4 4 18 (36999589) 4 4 19 (33032820) Good Good May be appropriate Strong Strong 5 References Study Quality 5 21 (30240292) 2 2 14 (27097789) 3 2 22 (31453765) 2 2 15 (36108478) 4 4 23 (37581498) 3 3 Usually not appropriate Expert Consensus O 0 mSv [ped] 1 Usually not Expert Consensus 0 0 mSv [ped] 1 <td>24 (24958821) 2 26 (30887736) 4 23 (37581498) 3 19 (33032820) Good May be appropriate Strong O 0 mSv [ped] 5 References Study Quality 34 (26547101) 2 20 (32903054) 4 33 (34406400) 2 35 (30316869) 1 17 (36719288) Good 7 (37150275) 4 18 (36999589) 4 19 (33032820) Good May be appropriate Strong \$\Phi \text{ 0.1-1mSv } \text{ 5} \$\text{References} \text{ Study Quality } \text{ 21 (30240292) } \text{ 2 } \$\text{14 (27097789) } \text{ 3 } 3 \$\text{22 (31453765) } \text{ 2 } 2 \$\text{15 (36108478) } \text{ 4 } 3 \$\text{Usually not appropriate } \text{ Expert Consensus } \text{ O 0 mSv } \text{ O mSv } \text{ [ped] 1 } 1 \$\text{ 1 }</td> <td>24 (24958821) 2 26 (30887736) 4 23 (37581498) 3 19 (33032820) Good May be appropriate Strong O 0 mSv [ped] 5 5 0 References Study Quality 34 (26547101) 2 20 (32903054) 4 33 (34406400) 2 35 (30316869) 1 17 (36719288) Good 7 (37150275) 4 18 (36999589) 4 19 (33032820) Good May be appropriate Strong Study Quality 21 (30240292) 2 14 (27097789) 3 22 (31453765) 2 15 (36108478) 4 23 (37581498) 3 Usually not appropriate Expert Consensus O 0 mSv [ped] 1 1 1 15</td> <td> 24 (24958821) 2 26 (30887736) 4 4 4 4 4 4 4 4 4 </td> <td> 24 (24958821) 2 26 (30887736) 4 4 4 4 4 4 4 4 4 </td> <td>24 (24958821) 2 26 (30887736) 4 23 (37581498) 3 19 (33032820) Good May be appropriate Strong O 0 mSv [ped] 5 5 0 0 0 0 References Study Quality 34 (26547101) 2 20 (32903054) 4 33 (34406400) 2 35 (30316869) 1 17 (36719288) Good 7 (37150275) 4 18 (36999589) 4 19 (33032820) Good May be appropriate Strong 2 0.1-1mSv Study Quality 21 (30240292) 21 (30240292) 2 14 (27097789) 3 22 (31453765) 2 15 (36108478) 4 23 (37581498) 3 Usually not appropriate Expert Consensus O 0 mSv [ped] 1 1 15 1 1 1 Usually not appropriate Expert Expert 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2</td> <td> 24 (24958821)</td> <td> 24 (24958821) 2 26 (30887736) 4 </td> <td> 24 (24958821)</td> <td> 24 (24958821)</td>	24 (24958821) 2 26 (30887736) 4 23 (37581498) 3 19 (33032820) Good May be appropriate Strong O 0 mSv [ped] 5 References Study Quality 34 (26547101) 2 20 (32903054) 4 33 (34406400) 2 35 (30316869) 1 17 (36719288) Good 7 (37150275) 4 18 (36999589) 4 19 (33032820) Good May be appropriate Strong \$\Phi \text{ 0.1-1mSv } \text{ 5} \$\text{References} \text{ Study Quality } \text{ 21 (30240292) } \text{ 2 } \$\text{14 (27097789) } \text{ 3 } 3 \$\text{22 (31453765) } \text{ 2 } 2 \$\text{15 (36108478) } \text{ 4 } 3 \$\text{Usually not appropriate } \text{ Expert Consensus } \text{ O 0 mSv } \text{ O mSv } \text{ [ped] 1 } 1 \$\text{ 1 }	24 (24958821) 2 26 (30887736) 4 23 (37581498) 3 19 (33032820) Good May be appropriate Strong O 0 mSv [ped] 5 5 0 References Study Quality 34 (26547101) 2 20 (32903054) 4 33 (34406400) 2 35 (30316869) 1 17 (36719288) Good 7 (37150275) 4 18 (36999589) 4 19 (33032820) Good May be appropriate Strong Study Quality 21 (30240292) 2 14 (27097789) 3 22 (31453765) 2 15 (36108478) 4 23 (37581498) 3 Usually not appropriate Expert Consensus O 0 mSv [ped] 1 1 1 15	24 (24958821) 2 26 (30887736) 4 4 4 4 4 4 4 4 4	24 (24958821) 2 26 (30887736) 4 4 4 4 4 4 4 4 4	24 (24958821) 2 26 (30887736) 4 23 (37581498) 3 19 (33032820) Good May be appropriate Strong O 0 mSv [ped] 5 5 0 0 0 0 References Study Quality 34 (26547101) 2 20 (32903054) 4 33 (34406400) 2 35 (30316869) 1 17 (36719288) Good 7 (37150275) 4 18 (36999589) 4 19 (33032820) Good May be appropriate Strong 2 0.1-1mSv Study Quality 21 (30240292) 21 (30240292) 2 14 (27097789) 3 22 (31453765) 2 15 (36108478) 4 23 (37581498) 3 Usually not appropriate Expert Consensus O 0 mSv [ped] 1 1 15 1 1 1 Usually not appropriate Expert Expert 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	24 (24958821)	24 (24958821) 2 26 (30887736) 4	24 (24958821)	24 (24958821)

		31 (25615744)			1				
		32 (27186635)			3				
		7 (37150275)			4				
		30 (34887334)			4				
MRI breast without IV contrast	I I 11.	 E		0.0 0.4					

MRI breast without IV contrast abbreviated	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	16	0	1	1	0	0	0	0	0	
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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.