

		13 (22808568)		2														
US FAST scan chest abdomen and pelvis	Usually appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	7	7	0	1	0	0	2	2	3	3	3			
		References	Study Quality															
		5 (22512989)	2															
CT whole body without IV contrast	May be appropriate	Strong	⊕⊕⊕⊕ 10-30 mSv		5	5	0	2	0	2	8	1	1	0	0			
		References	Study Quality															
		20 (26122129)	4															
		14 (19321199)	3															
		19 (2783289)	3															
		16 (25250591)	Good															
		15 (23949104)	3															
		18 (22458247)	4															
		8 (27163732)	2															
		17 (28610777)	Good															
Fluoroscopy retrograde urethrography	Usually not appropriate	Expert Consensus	⊕⊕⊕ 1-10 mSv	⊕⊕⊕ 0.3-3 mSv [ped]	3	3	5	2	2	1	2	1	0	0	1			
MRI abdomen and pelvis without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	2	2	7	2	1	2	1	0	0	0	1			
MRI abdomen and pelvis without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	2	2	5	6	3	0	0	0	0	0	0			

Variant 3: Major blunt trauma. Hemodynamically stable. Suspected facial injury. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations											
							1	2	3	4	5	6	7	8	9			
CT maxillofacial without IV contrast	Usually appropriate	Limited	⊕⊕ 0.1-1mSv		9	9	1	0	0	1	1	1	0	2	8			
		References	Study Quality															

21 (22964404)	4
22 (16702454)	4
23 (15730983)	3

CT head without IV contrast	Usually appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	8	8	1	0	0	0	1	1	3	2	6
Radiography trauma series	Usually appropriate	Strong	☼☼☼ 1-10 mSv		8	8	0	1	0	0	0	0	3	5	5

References	Study Quality
4 (22920605)	2
13 (22808568)	2

CT whole body with IV contrast	May be appropriate (Disagreement)	Expert Opinion	☼☼☼☼ 10-30 mSv		5	5	0	2	0	1	3	1	0	4	3
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References	Study Quality
20 (26122129)	4
14 (19321199)	3
19 (2783289)	3
16 (25250591)	Good
15 (23949104)	3
18 (22458247)	4
8 (27163732)	2
17 (28610777)	Good

CT whole body without IV contrast	May be appropriate	Strong	☼☼☼☼ 10-30 mSv		4	4	2	4	1	3	3	0	0	1	0
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References	Study Quality
20 (26122129)	4
14 (19321199)	3
19 (2783289)	3
16 (25250591)	Good
15 (23949104)	3
18 (22458247)	4

			8 (27163732)		2												
			17 (28610777)		Good												
CT head with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 0.3-3 mSv [ped]	2	2	3	6	2	1	0	1	0	0	1		
CT head without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	2	2	6	2	2	2	0	1	1	0	0		
CT maxillofacial with IV contrast	Usually not appropriate	Limited	☼☼ 0.1-1mSv		2	2	2	6	6	0	0	0	0	0	0		
			References				Study Quality										
			21 (22964404)				4										
			22 (16702454)				4										
			23 (15730983)				3										
CT maxillofacial without and with IV contrast	Usually not appropriate	Limited	☼☼☼ 1-10 mSv		2	2	6	4	4	0	0	0	0	0	0		
			References				Study Quality										
			21 (22964404)				4										
			22 (16702454)				4										
			23 (15730983)				3										

Variant 4: Major blunt trauma. Hemodynamically stable. Suspected extremity trauma. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Radiography extremity	Usually appropriate	Expert Consensus	Varies	Varies	9	9	0	0	1	0	0	0	1	1	11
CT whole body with IV contrast	Usually appropriate	Strong	☼☼☼☼ 10-30 mSv		8	8	0	0	0	1	2	3	1	3	4
			References				Study Quality								
			20 (26122129)				4								

14 (19321199)	3
19 (2783289)	3
16 (25250591)	Good
15 (23949104)	3
18 (22458247)	4
8 (27163732)	2
17 (28610777)	Good

Radiography trauma series	Usually appropriate	Strong	⊕⊕⊕ 1-10 mSv		8	8	0	1	0	0	0	0	2	5	6
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References	Study Quality
4 (22920605)	2
13 (22808568)	2

US FAST scan chest abdomen and pelvis	Usually appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	7	7	1	0	0	0	4	1	2	3	3
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References	Study Quality
5 (22512989)	2

CT whole body without IV contrast	May be appropriate (Disagreement)	Expert Opinion	⊕⊕⊕⊕ 10-30 mSv		5	5	0	2	3	2	3	1	1	2	0
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References	Study Quality
20 (26122129)	4
14 (19321199)	3
19 (2783289)	3
16 (25250591)	Good
15 (23949104)	3
18 (22458247)	4
8 (27163732)	2
17 (28610777)	Good

CT extremity without IV contrast	May be appropriate	Expert Consensus	Varies	Varies	5	5	0	2	3	0	8	1	0	0	0
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CTA extremity with IV contrast	May be appropriate (Disagreement)	Expert Opinion	Varies	Varies	5	5	0	1	1	0	2	1	5	2	2
		References		Study Quality											
		24 (22190106)		4											
CT extremity with IV contrast	May be appropriate	Expert Consensus	Varies	Varies	4	4	1	2	4	3	3	1	0	0	0
CT extremity without and with IV contrast	Usually not appropriate	Expert Consensus	Varies	Varies	2	2	6	2	2	1	2	1	0	0	0

Variant 5: Major blunt trauma. Hemodynamically stable. Suspected bowel trauma. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
CT abdomen and pelvis with IV contrast	Usually appropriate	Limited	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	9	9	1	0	0	0	1	0	1	2	9
		References		Study Quality											
		25 (23624596)		Inadequate											
		19 (2783289)		3											
US FAST scan chest abdomen and pelvis	Usually appropriate	Limited	0 0 mSv	0 0 mSv [ped]	8	8	0	1	0	0	1	0	4	5	3
		References		Study Quality											
		5 (22512989)		2											
CT whole body with IV contrast	Usually appropriate	Strong	⊕⊕⊕⊕ 10-30 mSv		8	8	0	1	0	0	0	0	1	8	4
		References		Study Quality											
		20 (26122129)		4											
		14 (19321199)		3											
		19 (2783289)		3											
		16 (25250591)		Good											

CT abdomen and pelvis without and with IV contrast	Usually not appropriate	Limited	☼☼☼☼ 10-30 mSv	☼☼☼☼☼ 10-30 mSv [ped]	2	2	6	5	3	0	0	0	0	0	0
		References	Study Quality												
		25 (23624596)	Inadequate												
		19 (2783289)	3												
MRI abdomen and pelvis without IV contrast	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	2	2	7	1	3	0	1	1	1	0	0
		References	Study Quality												
		28 (-3147030)	4												
MRI abdomen and pelvis without and with IV contrast	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	2	2	7	0	3	2	1	0	0	1	0
		References	Study Quality												
		28 (-3147030)	4												
US abdomen	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	2	2	5	3	6	0	0	0	0	0	0
		References	Study Quality												
		29 (15278707)	4												

Variant 6: Major blunt trauma. Hemodynamically stable. Suspected urinary system, including urethra trauma. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Fluoroscopy retrograde urethrography	Usually appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	9	9	0	0	0	2	1	1	1	1	8
		References	Study Quality												
		47 (28126218)	4												
Radiography trauma series	Usually appropriate	Strong	☼☼☼ 1-10 mSv		9	9	0	1	0	0	0	0	3	3	7
		References	Study Quality												

CT abdomen and pelvis without IV contrast	May be appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	5	5	1	2	0	4	8	0	0	0	0
		References	Study Quality												
		25 (23624596)	Inadequate												
		19 (2783289)	3												
CTU without and with IV contrast	May be appropriate (Disagreement)	Expert Opinion	☼☼☼☼ 10-30 mSv		5	5	0	2	0	0	2	2	2	3	4
CT whole body without IV contrast	May be appropriate	Strong	☼☼☼☼ 10-30 mSv		5	5	0	3	2	2	5	2	0	0	0
		References	Study Quality												
		20 (26122129)	4												
		19 (2783289)	3												
		16 (25250591)	Good												
		15 (23949104)	3												
		18 (22458247)	4												
		8 (27163732)	2												
		17 (28610777)	Good												
Radiography intravenous urography	Usually not appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	3	3	3	1	5	2	2	1	0	0	0
		References	Study Quality												
		46 (1757139)	4												
		43 (6616359)	4												
		44 (6359436)	4												
		45 (6632094)	4												
US abdomen and pelvis	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	3	3	2	5	6	0	0	0	0	0	1
		References	Study Quality												
		29 (15278707)	4												
		41 (15798158)	3												
		42 (9323670)	3												

CT abdomen and pelvis without and with IV contrast	Usually not appropriate	Limited	☼☼☼☼ 10-30 mSv	☼☼☼☼☼ 10-30 mSv [ped]	2	2	4	4	5	1	0	0	0	1	0
		References	Study Quality												
		25 (23624596)	Inadequate												
		19 (2783289)	3												
MRI abdomen and pelvis without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	2	2	7	4	1	2	0	0	0	0	0
MRI abdomen and pelvis without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	2	2	7	3	2	1	0	0	1	0	0
MRU without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	2	2	5	5	2	0	1	0	1	0	0

Variant 7: Major blunt trauma. Hemodynamically stable. Suspected chest trauma. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
CTA chest with IV contrast	Usually appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	9	9	0	1	0	0	2	1	2	1	7
		References	Study Quality												
		20 (26122129)	4												
CT chest with IV contrast	Usually appropriate	Strong	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	9	9	1	0	0	0	1	0	1	2	9
		References	Study Quality												
		20 (26122129)	4												
		49 (12355007)	2												
		48 (26169926)	3												
		8 (27163732)	2												

CT whole body without IV contrast	May be appropriate	Strong	⊕⊕⊕⊕ 10-30 mSv		5	5	0	3	0	3	7	1	0	0	0
		References	Study Quality												
		20 (26122129)	4												
		14 (19321199)	3												
		19 (2783289)	3												
		16 (25250591)	Good												
		15 (23949104)	3												
		18 (22458247)	4												
		17 (28610777)	Good												
CT chest without and with IV contrast	Usually not appropriate	Strong	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕⊕ 3-10 mSv [ped]	3	3	3	4	7	0	0	0	0	0	0
		References	Study Quality												
		20 (26122129)	4												
		49 (12355007)	2												
		48 (26169926)	3												
		8 (27163732)	2												
US chest	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	3	3	1	4	3	1	4	1	0	0	0
		References	Study Quality												
		49 (12355007)	2												
MRI chest without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	9	1	4	0	0	0	0	0	0
MRI chest without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	8	1	5	0	0	0	0	0	0

Variant 8: Major blunt trauma. Hemodynamically stable. Pregnant patient. Initial imaging.

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

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
US FAST scan chest abdomen and pelvis	Usually appropriate	Limited	0 0 mSv	0 0 mSv [ped]	9	9	1	0	0	0	2	1	1	1	8
		References	Study Quality												
		5 (22512989)	2												
		54 (15516618)	3												
US pelvis	Usually appropriate	Limited	0 0 mSv	0 0 mSv [ped]	9	9	0	1	1	0	0	0	1	3	8
		References	Study Quality												
		55 (20198552)	4												
CT abdomen and pelvis with IV contrast	Usually appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	8	8	1	0	0	0	0	0	5	5	3
		References	Study Quality												
		25 (23624596)	Inadequate												
		19 (2783289)	3												
CT whole body with IV contrast	Usually appropriate	Strong	☼☼☼☼ 10-30 mSv		7	7	0	1	0	0	3	3	3	1	3
		References	Study Quality												
		20 (26122129)	4												
		14 (19321199)	3												
		19 (2783289)	3												
		16 (25250591)	Good												
		15 (23949104)	3												
		18 (22458247)	4												
		8 (27163732)	2												
		17 (28610777)	Good												
Radiography trauma series	Usually appropriate	Strong	☼☼☼ 1-10 mSv		7	7	0	0	1	0	1	1	5	2	4
		References	Study Quality												

			4 (22920605)		2														
			13 (22808568)		2														
CTA abdomen and pelvis with IV contrast	May be appropriate	Limited	⊕⊕⊕⊕ 10-30 mSv		6	6	0	0	1	2	2	5	3	0	1				
			References		Study Quality														
			27 (19458997)		4														
			26 (24056401)		2														
CTA chest with IV contrast	May be appropriate	Limited	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	6	6	0	1	0	1	2	6	3	1	0				
			References		Study Quality														
			20 (26122129)		4														
CT abdomen and pelvis without IV contrast	May be appropriate	Limited	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	4	4	1	1	4	2	5	1	0	0	0				
			References		Study Quality														
			25 (23624596)		Inadequate														
			19 (2783289)		3														
CT whole body without IV contrast	May be appropriate	Strong	⊕⊕⊕⊕ 10-30 mSv		4	4	0	4	1	3	5	1	0	0	0				
			References		Study Quality														
			20 (26122129)		4														
			14 (19321199)		3														
			19 (2783289)		3														
			16 (25250591)		Good														
			15 (23949104)		3														
			18 (22458247)		4														
			8 (27163732)		2														
			17 (28610777)		Good														
CT abdomen and pelvis without and with IV contrast	Usually not appropriate	Limited	⊕⊕⊕⊕ 10-30 mSv	⊕⊕⊕⊕⊕ 10-30 mSv [ped]	2	2	7	3	2	2	0	0	0	0	0				

References	Study Quality
25 (23624596)	Inadequate
19 (2783289)	3

MRI abdomen and pelvis without IV contrast	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	2	2	7	3	3	1	0	0	0	0	0
MRI abdomen and pelvis without and with IV contrast	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	1	1	8	3	3	0	0	0	0	0	0

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.