American College of Radiology
ACR Appropriateness Criteria®

Major Blunt Trauma

Variant 1: Major blunt trauma. Hemodynamically unstable. Initial imaging.

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	Strong	O 0 mSv	O 0 mSv [ped]	9	9	1	0	0	0	1	2	0	2	8
References	Study Quality														
5 (22512989)	2														
12 (10437835)	4														
11 (25205343)	2														
10 (19944412)	3														
9 (29146418)	2														
Radiography trauma series	Usually appropriate	Strong	☢☢☢ 1-10 mSv		9	9	0	1	0	1	0	0	2	2	8
References	Study Quality														
4 (22920605)	2														
13 (22808568)	2														
CT whole body with IV contrast	May be appropriate	Moderate	☢☢☢☢ 10-30 mSv		5	5	1	1	2	2	6	1	0	1	0
References	Study Quality														
8 (27163732)	2														
7 (23894365)	4														
6 (26104319)	4														

CT whole body without IV contrast	May be appropriate	Moderate	☢☢☢☢ 10-30 mSv		4	4	2	0	4	3	4	0	1	0	0

References	Study Quality
8 (27163732)	2
7 (23894365)	4
6 (26104319)	4

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

Variant 2: Major blunt trauma. Hemodynamically stable. Not otherwise specified. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
CT whole body with IV contrast	Usually appropriate	Strong	☢☢☢☢ 10-30 mSv		9	9	1	0	0	0	0	2	1	2	8

References	Study Quality
8 (27163732)	2
20 (26122129)	4
19 (2783289)	3
18 (22458247)	4
17 (28610777)	Good
16 (25250591)	Good
15 (23949104)	3
14 (19321199)	3

Radiography trauma series	Usually appropriate	Strong	☢☢☢ 1-10 mSv		9	9	0	1	0	0	0	0	2	4	7

References	Study Quality
4 (22920605)	2

		13 (22808568)		2												
US FAST scan chest abdomen and pelvis	Usually appropriate	Limited	O 0 mSv	O 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												
		8 (27163732)		2												
		20 (26122129)		4												
		19 (2783289)		3												
		18 (22458247)		4												
		17 (28610777)		Good												
		16 (25250591)		Good												
		15 (23949104)		3												
		14 (19321199)		3												
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	O 0 mSv	O 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	O 0 mSv	O 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											

		23 (15730983)	3												
		22 (16702454)	4												
		21 (22964404)	4												
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	7	0	2	0	1	3	1	0	4	3
		References	Study Quality												
		8 (27163732)	2												
		16 (25250591)	Good												
		15 (23949104)	3												
		14 (19321199)	3												
		20 (26122129)	4												
		19 (2783289)	3												
		18 (22458247)	4												
		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
		References	Study Quality												
		8 (27163732)	2												
		20 (26122129)	4												
		19 (2783289)	3												
		18 (22458247)	4												
		17 (28610777)	Good												
		16 (25250591)	Good												

		15 (23949104)		3												
		14 (19321199)		3												
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												
		23 (15730983)		3												
		22 (16702454)		4												
		21 (22964404)		4												

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											
		8 (27163732)		2											

		20 (26122129)	4												
		19 (2783289)	3												
		18 (22458247)	4												
		17 (28610777)	Good												
		16 (25250591)	Good												
		15 (23949104)	3												
		14 (19321199)	3												
Radiography trauma series	Usually appropriate	Strong	☢☢☢ 1-10 mSv		8	8	0	1	0	0	0	0	2	5	6
		References	Study Quality												
		4 (22920605)	2												
		13 (22808568)	2												
US FAST scan chest abdomen and pelvis	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	7	7	1	0	0	0	4	1	2	3	3
		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
		References	Study Quality												
		8 (27163732)	2												
		20 (26122129)	4												
		19 (2783289)	3												
		18 (22458247)	4												
		17 (28610777)	Good												
		16 (25250591)	Good												
		15 (23949104)	3												
		14 (19321199)	3												
CT extremity without IV contrast	May be appropriate	Expert Consensus	Varies	Varies	5	5	0	2	3	0	8	1	0	0	0

CTA extremity with IV contrast	May be appropriate (Disagreement)	Expert Opinion	Varies	Varies	5	7	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	O 0 mSv	O 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												
	8 (27163732)		2												
	17 (28610777)		Good												
	16 (25250591)		Good												
	15 (23949104)		3												

		14 (19321199)		3											
		20 (26122129)		4											
		19 (2783289)		3											
		18 (22458247)		4											
Radiography trauma series	Usually appropriate	Strong	☢☢☢ 1-10 mSv		8	8	1	0	0	0	0	0	2	6	5
		References		Study Quality											
		4 (22920605)		2											
		13 (22808568)		2											
CTA abdomen and pelvis with IV contrast	May be appropriate	Limited	☢☢☢☢☢ 30-100 mSv		6	6	0	0	1	0	5	2	2	2	2
		References		Study Quality											
		26 (24056401)		2											
		27 (19458997)		4											
CT whole body without IV contrast	May be appropriate (Disagreement)	Expert Opinion	☢☢☢☢ 10-30 mSv		5	4	0	2	2	4	3	1	1	1	0
		References		Study Quality											
		8 (27163732)		2											
		14 (19321199)		3											
		15 (23949104)		3											
		16 (25250591)		Good											
		17 (28610777)		Good											
		18 (22458247)		4											
		19 (2783289)		3											
		20 (26122129)		4											
CT abdomen and pelvis without IV contrast	May be appropriate	Limited	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	4	4	2	2	2	2	4	1	1	0	0
		References		Study Quality											
		19 (2783289)		3											
		25 (23624596)		Inadequate											

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											
	19 (2783289)			3											
	25 (23624596)			Inadequate											
MRI abdomen and pelvis without IV contrast	Usually not appropriate	Limited	O 0 mSv	O 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	O 0 mSv	O 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	O 0 mSv	O 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											

		4 (22920605)	2												
		13 (22808568)	2												
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	3	5	5
		References	Study Quality												
		19 (2783289)	3												
		25 (23624596)	Inadequate												
CT whole body with IV contrast	Usually appropriate	Strong	☢☢☢☢ 10-30 mSv		8	8	1	0	0	0	0	1	3	4	5
		References	Study Quality												
		8 (27163732)	2												
		20 (26122129)	4												
		19 (2783289)	3												
		18 (22458247)	4												
		17 (28610777)	Good												
		16 (25250591)	Good												
		15 (23949104)	3												
CTA abdomen and pelvis with IV contrast	Usually appropriate	Limited	☢☢☢☢☢ 30-100 mSv		7	7	1	0	0	0	2	1	5	4	1
		References	Study Quality												
		26 (24056401)	2												
		27 (19458997)	4												
US FAST scan chest abdomen and pelvis	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	7	7	0	1	0	0	4	2	1	3	3
		References	Study Quality												
		5 (22512989)	2												
		35 (-3091864)	4												
		41 (15798158)	3												
		42 (9323670)	3												

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
19 (2783289)	3
25 (23624596)	Inadequate

CTU without and with IV contrast	May be appropriate (Disagreement)	Expert Opinion	☢☢☢☢ 10-30 mSv		5	7	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
8 (27163732)	2
20 (26122129)	4
19 (2783289)	3
18 (22458247)	4
17 (28610777)	Good
16 (25250591)	Good
15 (23949104)	3

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
43 (6616359)	4
44 (6359436)	4
45 (6632094)	4
46 (1757139)	4

US abdomen and pelvis	Usually not appropriate	Limited	O 0 mSv	O 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
19 (2783289)	3
25 (23624596)	Inadequate

MRI abdomen and pelvis without IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 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	O 0 mSv	O 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	O 0 mSv	O 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
8 (27163732)	2
20 (26122129)	4
48 (26169926)	3
49 (12355007)	2

CT whole body with IV contrast	Usually appropriate	Strong	☢☢☢☢ 10-30 mSv		9	9	0	1	0	0	0	0	1	5	7

References	Study Quality
20 (26122129)	4
19 (2783289)	3
18 (22458247)	4
17 (28610777)	Good
16 (25250591)	Good
15 (23949104)	3
14 (19321199)	3

Radiography trauma series	Usually appropriate	Strong	☢☢☢ 1-10 mSv		9	9	1	0	0	0	0	0	0	4	9

References	Study Quality
4 (22920605)	2
13 (22808568)	2
53 (15290469)	3
52 (21146014)	3
51 (17045268)	3
50 (16494179)	3

CT chest without IV contrast	May be appropriate	Strong	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	5	5	1	0	1	2	9	0	1	0	0

References	Study Quality
8 (27163732)	2
20 (26122129)	4
48 (26169926)	3
49 (12355007)	2

US FAST scan chest abdomen and pelvis	May be appropriate (Disagreement)	Expert Opinion	O 0 mSv	O 0 mSv [ped]	5	7	0	1	1	0	2	2	2	2	4

References	Study Quality
5 (22512989)	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
18 (22458247)	4
17 (28610777)	Good
16 (25250591)	Good
15 (23949104)	3
14 (19321199)	3
20 (26122129)	4
19 (2783289)	3

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
8 (27163732)	2
20 (26122129)	4
48 (26169926)	3
49 (12355007)	2

US chest	Usually not appropriate	Limited	O 0 mSv	O 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	O 0 mSv	O 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	O 0 mSv	O 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	O 0 mSv	O 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	O 0 mSv	O 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												
	19 (2783289)		3												
	25 (23624596)		Inadequate												
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												
	8 (27163732)		2												
	20 (26122129)		4												
	19 (2783289)		3												
	18 (22458247)		4												
	17 (28610777)		Good												
	16 (25250591)		Good												
	15 (23949104)		3												
	14 (19321199)		3												
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	☢☢☢☢☢ 30-100 mSv		6	6	0	0	1	2	2	5	3	0	1
		References		Study Quality											
		26 (24056401)		2											
		27 (19458997)		4											
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											
		19 (2783289)		3											
		25 (23624596)		Inadequate											
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											
		8 (27163732)		2											
		16 (25250591)		Good											
		15 (23949104)		3											
		14 (19321199)		3											
		20 (26122129)		4											
		19 (2783289)		3											
		18 (22458247)		4											
		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
19 (2783289)	3
25 (23624596)	Inadequate

MRI abdomen and pelvis without IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 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	O 0 mSv	O 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.**