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

#### Suspected Spine Trauma

**Variant 1:** Age greater than or equal to 16 years and less than 65 years. Suspected acute blunt cervical spine trauma; imaging not indicated by NEXUS or CCR clinical criteria. Patient meets low-risk criteria. Initial imaging.

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MRI cervical spine without and with IV contrast

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Radiography cervical spine

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Variant 2: Age greater than or equal to 16 years. Suspected acute cervical spine blunt trauma. Imaging indicated by NEXUS or CCR clinical criteria. Initial imaging.

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Variant 3: Age greater than or equal to 16 years. Suspected acute cervical spine blunt trauma. Confirmed or suspected cervical spinal cord or nerve root injury, with or without traumatic injury identified on cervical CT. Next imaging study.

<table>
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<th>SOE</th>
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### Variant 4: Age greater than or equal to 16 years. Acute cervical spine injury detected on radiographs. Treatment planning for mechanically unstable spine.

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### CT Myelography Cervical Spine

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### CT Cervical Spine with IV Contrast

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### CT Cervical Spine without and with IV Contrast

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### MRI Cervical Spine without and with IV Contrast

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**Variant 5:** Age greater than or equal to 16 years. Suspected acute cervical spine blunt trauma. Clinical or imaging findings suggest arterial injury with or without positive cervical spine CT. Next imaging study.
<table>
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| Arteriography cervicocerebral                     | May be appropriate       | Strong| ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 6      | 6      | 0 0 0 1 5 6 1 2 2 |

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| MRA neck without IV contrast                      | May be appropriate       | Strong| O 0 mSv      | O 0 mSv [ped]     | 5      | 5      | 0 0 0 13 3 0 0 0 |

<table>
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| MRA neck without and with IV contrast            | Usually appropriate      | Strong| O 0 mSv      | O 0 mSv [ped]     | 7      | 7      | 1 0 0 0 2 1 6 5 2 |

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<th>Study Quality</th>
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Variant 6: Age greater than or equal to 16 years. Suspected acute cervical spine blunt trauma. Obtunded patient with no traumatic injury identified on cervical spine CT. Next imaging study after CT cervical spine without IV contrast.

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- 65 (22327974) 3

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- 48 (18469647) 3
- 47 (20065765) M
- 46 (21619408) M
- 45 (18404054) 4
- 44 (25997715) 4
- 41 (20336892) 4
- 40 (16374279) 2
| MRI cervical spine without and with IV contrast | Usually not appropriate | Strong | O 0 mSv | O 0 mSv [ped] | 1 | 1 | 14 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
|-----------------------------------------------|------------------------|--------|---------|-------------|----|----|-----|----|----|-----|----|----|-----|----|----|---|---|
| References                                    | Study Quality          |        |         |             |    |    |     |    |    |     |    |    |     |    |    |   |   |
| 41 (20336892)                                 | 4                      |        |         |             |    |    |     |    |    |     |    |    |     |    |    |   |   |
| 40 (16374279)                                 | 2                      |        |         |             |    |    |     |    |    |     |    |    |     |    |    |   |   |
| 39 (18073599)                                 | 4                      |        |         |             |    |    |     |    |    |     |    |    |     |    |    |   |   |
| 38 (24731570)                                 | 3                      |        |         |             |    |    |     |    |    |     |    |    |     |    |    |   |   |
| 80 (18073612)                                 | 2                      |        |         |             |    |    |     |    |    |     |    |    |     |    |    |   |   |
| 79 (25076462)                                 | 3                      |        |         |             |    |    |     |    |    |     |    |    |     |    |    |   |   |
| 78 (22491556)                                 | 3                      |        |         |             |    |    |     |    |    |     |    |    |     |    |    |   |   |
| 77 (28993912)                                 | 4                      |        |         |             |    |    |     |    |    |     |    |    |     |    |    |   |   |
| 62 (23075855)                                 | 2                      |        |         |             |    |    |     |    |    |     |    |    |     |    |    |   |   |
| 56 (27438681)                                 | 2                      |        |         |             |    |    |     |    |    |     |    |    |     |    |    |   |   |
| 55 (27893647)                                 | 2                      |        |         |             |    |    |     |    |    |     |    |    |     |    |    |   |   |

<p>| Radiography cervical spine                  | Usually not appropriate | Limited | ☢☢ 0.1-1mSv | ☢☢ 0.03-0.3 mSv [ped] | 1 | 1 | 14 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 |
|---------------------------------------------|-------------------------|---------|--------------|-----------------------|----|----|-----|----|----|-----|----|----|-----|----|----|---|---|
| References                                  | Study Quality           |         |              |                       |    |    |     |    |    |     |    |    |     |    |    |   |   |</p>
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Variant 7: Age greater than or equal to 16 years. Suspected acute cervical spine blunt trauma. Clinical or imaging findings suggest ligamentous injury. Next imaging study after CT cervical spine without IV contrast.
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| Procedure                          | Appropriateness | Strong | ☢☢ 0.1-1mSv | ☢☢☢ 0.03-0.3 mSv [ped] | 1 | 1 | 10 | 0 | 1 | 3 | 3 | 0 | 0 | 0 | 0 |

| Procedure                          | Appropriateness | M | Strong | ☢☢ 0.1-1mSv | ☢☢☢ 0.03-0.3 mSv [ped] | 1 | 1 | 10 | 0 | 1 | 3 | 3 | 0 | 0 | 0 | 0 |

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- 46 (21619408)
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- 44 (25997715)
- 42 (18188119)
- 41 (20336892)
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- 40 (16374279)
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- 35 (24139671)
Variant 8: Age greater than or equal to 16 years. Suspected acute cervical spine blunt trauma. Follow-up imaging on patient with no unstable injury demonstrated initially, but kept in collar for neck pain. No new neurologic symptoms. Includes whiplash associated disorders.

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### Variant 9:

Age greater than or equal to 16 years. Blunt trauma meeting criteria for thoracic and lumbar imaging. Initial imaging.
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Variant 10: Age greater than or equal to 16 years. Acute thoracic or lumbar spine injury detected on radiographs or noncontrast CT. Neurologic abnormalities. Next imaging study.

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Please refer to the supporting documentation for a more complete discussion of the concepts and their definitions below.

Final Tabulations: A histogram of the number of panel members who rated the recommendation as noted in the column heading (i.e., 1, 2, 3, … etc.)

Disagree: The variation of the individual ratings from the median rating indicates panel disagreement on the final recommendation.

References: Lists the references associated with the recommendation.

SQ: Study Quality (1, 2, 3, 4, Good M or Inadequate M) of the references listed.

RRL: Information on the Relative Radiation Level (RRL) designations can be found here.