# American College of Radiology
## ACR Appropriateness Criteria®

### Back Pain — Child

**Variant 1:** Child. Back pain with none of the following clinical red flags: constant pain, night pain, radicular pain, pain lasting >4 weeks, abnormal neurologic examination. Initial imaging evaluation.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Appropriateness Category</th>
<th>SOE</th>
<th>Adults RRL</th>
<th>Peds RRL</th>
<th>Rating</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radiography spine area of interest</td>
<td>Usually not appropriate</td>
<td>Varies</td>
<td>Varies</td>
<td>2</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>CT spine area of interest without IV contrast</td>
<td>Usually not appropriate</td>
<td>Varies</td>
<td>Varies</td>
<td>1</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>CT spine area of interest without and with IV contrast</td>
<td>Usually not appropriate</td>
<td>Varies</td>
<td>Varies</td>
<td>1</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>CT spine area of interest with IV contrast</td>
<td>Usually not appropriate</td>
<td>Varies</td>
<td>Varies</td>
<td>1</td>
<td>n/a</td>
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<tr>
<td>MRI complete spine without IV contrast</td>
<td>Usually not appropriate</td>
<td>0 mSv</td>
<td>0 mSv [ped]</td>
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<td>n/a</td>
<td></td>
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<tr>
<td>MRI complete spine without and with IV contrast</td>
<td>Usually not appropriate</td>
<td>0 mSv</td>
<td>0 mSv [ped]</td>
<td>1</td>
<td>n/a</td>
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<tr>
<td>MRI complete spine with IV contrast</td>
<td>Usually not appropriate</td>
<td>0 mSv</td>
<td>0 mSv [ped]</td>
<td>1</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>CT myelography complete spine</td>
<td>Usually not appropriate</td>
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<td>3-10</td>
<td>1</td>
<td>n/a</td>
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<tr>
<td>Bone scan whole body with SPECT or SPECT/CT complete spine</td>
<td>Usually not appropriate</td>
<td></td>
<td></td>
<td>1-10</td>
<td>1</td>
<td>n/a</td>
</tr>
</tbody>
</table>
**Variant 2:** Child. Back pain with 1 or more of the following clinical red flags: constant pain, night pain, radicular pain, pain lasting >4 weeks, abnormal neurologic examination. Initial imaging evaluation.

<table>
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<tr>
<th>Procedure</th>
<th>Appropriateness Category</th>
<th>SOE</th>
<th>Adults RRL</th>
<th>Peds RRL</th>
<th>Rating</th>
<th>Median</th>
<th>Final Tabulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radiography spine area of interest</td>
<td>Usually appropriate</td>
<td>Varies</td>
<td>Varies</td>
<td></td>
<td>8</td>
<td>n/a</td>
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<tr>
<td>MRI complete spine without IV contrast</td>
<td>May be appropriate</td>
<td>O 0 mSv</td>
<td>O 0 mSv [ped]</td>
<td>5</td>
<td>n/a</td>
<td>0 0 0 0 0 0 0 0 0</td>
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<tr>
<td>MRI complete spine without and with IV contrast</td>
<td>May be appropriate</td>
<td>O 0 mSv</td>
<td>O 0 mSv [ped]</td>
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<td>Usually not appropriate</td>
<td>Varies</td>
<td>Varies</td>
<td></td>
<td>3</td>
<td>n/a</td>
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<tr>
<td>CT spine area of interest with IV contrast</td>
<td>Usually not appropriate</td>
<td>Varies</td>
<td>Varies</td>
<td></td>
<td>2</td>
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<tr>
<td>Bone scan whole body with SPECT or SPECT/CT complete spine</td>
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<td>☢☢☢ 1-10 mSv</td>
<td>☢☢☢☢ 3-10 mSv [ped]</td>
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<td>n/a</td>
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<tr>
<td>CT spine area of interest without and with IV contrast</td>
<td>Usually not appropriate</td>
<td>Varies</td>
<td>Varies</td>
<td></td>
<td>1</td>
<td>n/a</td>
<td>0 0 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td>MRI complete spine with IV contrast</td>
<td>Usually not appropriate</td>
<td>O 0 mSv</td>
<td>O 0 mSv [ped]</td>
<td>1</td>
<td>n/a</td>
<td>0 0 0 0 0 0 0 0 0</td>
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<tr>
<td>CT myelography complete spine</td>
<td>Usually not appropriate</td>
<td>☢☢☢☢☢ 30-100 mSv</td>
<td>☢☢☢☢☢ 3-10 mSv [ped]</td>
<td>1</td>
<td>n/a</td>
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**Variant 3:** Child. Back pain with 1 or more of the following clinical red flags: constant pain, night pain, radicular pain, pain lasting >4 weeks, abnormal neurologic examination. Negative radiographs.
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<th>Procedure</th>
<th>Appropriateness Category</th>
<th>SOE</th>
<th>Adults RRL</th>
<th>Peds RRL</th>
<th>Rating</th>
<th>Median</th>
<th>Final Tabulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRI complete spine without IV contrast</td>
<td>Usually appropriate</td>
<td>0 mSv</td>
<td>0 mSv [ped]</td>
<td>8</td>
<td>n/a</td>
<td>0 0 0 0 0 0 0 0 0</td>
<td></td>
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<tr>
<td>MRI complete spine without and with IV contrast</td>
<td>May be appropriate</td>
<td>0 mSv</td>
<td>0 mSv [ped]</td>
<td>6</td>
<td>n/a</td>
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<tr>
<td>CT spine area of interest without IV contrast</td>
<td>May be appropriate</td>
<td>Varies</td>
<td>Varies</td>
<td>5</td>
<td>n/a</td>
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<tr>
<td>Bone scan whole body with SPECT or SPECT/CT complete spine</td>
<td>May be appropriate</td>
<td>☢☢☢ 1-10 mSv</td>
<td>☢☢☢☢☢ 3-10 mSv</td>
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<td>n/a</td>
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<td>CT spine area of interest with IV contrast</td>
<td>Usually not appropriate</td>
<td>Varies</td>
<td>Varies</td>
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<td>n/a</td>
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<td>CT spine area of interest without and with IV contrast</td>
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<td>Varies</td>
<td>Varies</td>
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<tr>
<td>MRI complete spine with IV contrast</td>
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<td>0 mSv [ped]</td>
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<tr>
<td>CT myelography complete spine</td>
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<td>☢☢☢☢☢ 3-10 mSv</td>
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Variant 4: Child. Back pain with 1 or more of the following clinical red flags: constant pain, night pain, radicular pain, pain lasting >4 weeks, abnormal neurologic examination. Positive radiographs.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Appropriateness Category</th>
<th>SOE</th>
<th>Adults RRL</th>
<th>Peds RRL</th>
<th>Rating</th>
<th>Median</th>
<th>Final Tabulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRI complete spine without IV contrast</td>
<td>Usually appropriate</td>
<td>0 mSv</td>
<td>0 mSv [ped]</td>
<td>8</td>
<td>n/a</td>
<td>0 0 0 0 0 0 0 0 0</td>
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<tr>
<td>MRI complete spine without and with IV contrast</td>
<td>Usually appropriate</td>
<td>0 mSv</td>
<td>0 mSv [ped]</td>
<td>8</td>
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</table>
### Variant 5: Child. Chronic back pain associated with overuse. Mechanical back pain.

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<th>Procedure</th>
<th>Appropriateness Category</th>
<th>SOE</th>
<th>Adults RRL</th>
<th>Peds RRL</th>
<th>Rating</th>
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<th>Final Tabulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radiography spine area of interest</td>
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<td>Varies</td>
<td>Varies</td>
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<td>Varies</td>
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<tr>
<td>Bone scan whole body with SPECT or SPECT/CT complete spine</td>
<td>May be appropriate</td>
<td>🚭腿部 1-10 mSv</td>
<td>🚭腿部 3-10 mSv [ped]</td>
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<tr>
<td>MRI spine area of interest without and with IV contrast</td>
<td>Usually not appropriate</td>
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<td>O 0 mSv [ped]</td>
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<td>Appropriateness Category</td>
<td>SOE</td>
<td>Adults RRL</td>
<td>Peds RRL</td>
<td>Rating</td>
<td>Median</td>
<td>Final Tabulations</td>
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<td>CT spine area of interest without and with IV contrast</td>
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<td>Varies</td>
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<td>n/a</td>
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<tr>
<td>CT myelography complete spine</td>
<td>Usually not appropriate</td>
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<td>☢☢☢☢ 30-100 mSv</td>
<td>☢☢☢☢ 3-10 mSv [ped]</td>
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<tr>
<td>MRI spine area of interest with IV contrast</td>
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<td></td>
<td>O 0 mSv</td>
<td>O 0 mSv [ped]</td>
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<td>n/a</td>
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<tr>
<td><strong>Variant 6:</strong> Child. Back pain associated with suspected inflammation, infection, or malignancy.</td>
<td></td>
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<td>MRI complete spine without and with IV contrast</td>
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<td>O 0 mSv [ped]</td>
<td>O 0 mSv [ped]</td>
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<td>CT spine area of interest without IV contrast</td>
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<tr>
<td>MRI complete spine without IV contrast</td>
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<tr>
<td>Bone scan whole body with SPECT or SPECT/CT complete spine</td>
<td>May be appropriate</td>
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<td>☢☢☢ 1-10 mSv</td>
<td>☢☢☢☢ 3-10 mSv [ped]</td>
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<tr>
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<tr>
<td>MRI complete spine with IV contrast</td>
<td>Usually not appropriate</td>
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<td>O 0 mSv [ped]</td>
<td>O 0 mSv [ped]</td>
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<td>CT Dose 5 (mSv)</td>
<td>CT Dose 6 (mSv)</td>
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</tr>
<tr>
<td>CT spine area of interest with IV</td>
<td>Usually not</td>
<td>Varies</td>
<td>Varies</td>
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<td>n/a</td>
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<td>and without IV contrast</td>
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<tr>
<td>CT myelography complete spine</td>
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<td>30-100 mSv</td>
<td>3-10 mSv</td>
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</tbody>
</table>
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.